635

Virginia Medical Monthly

Official Organ of the Medical Society of Virginia

Vol. 57, No. 10. WHOLE No. 943. RICHMOND, VA., JANUARY, 1931 20 CENTS A COPY $2.00 A YEAR

CANCER EDUCATION.*

By SOUTHGATE LEIGH, M. D., F. A. C. S., Norfolk, Va.
Chairman, District Committee of the American Association for the Control of Cancer.

Education of the public and profession in regard to cancer reminds one of antisepsis. The story in each is so simple that it is difficult to impress on the minds of the people. It is so simple that they don't believe it.

Antisepsis has revolutionized surgery, which before the days of Lister was a nightmare, especially in hospitals, where septicaemia, pyemia, erysipelas, hospital gangrene and death were rampant. The antiseptic methods which changed all of this horror are so simple that even in this present enlightened age they are often neglected with unfortunate and even disastrous results. The simplicity of the thing makes it hard to impress upon the mind.

And so in a way, it is with cancer. There are many things that we absolutely know about this dreaded disease, and those things are most encouraging but simple.

Cancer is really preventable or curable in almost all cases. If we can persuade the public and the doctors in general to believe that statement we can get somewhere. It is also necessary for one to analyze the statement and use common sense, while doing so.

The entire body is made up of cells which ordinarily multiply at a certain rate of speed. Cancer is in a way a "craziness" of these cells, making them multiply with exceeding rapidity. They seem to go wild,—"running amuck," as one writer terms it.

We know that this "crazy" condition is due to irritation of one sort or another continued over a considerable length of time. The vitally important thing to do is to prevent and stop irritation.

The irritants may be tobacco on the lip, a sharp tooth cutting the tongue, the scratching of a mole by the comb, hot foods, gall-stones, kidney stones, raw spots in any part of the body, such as the stomach, intestine, uterus. If any part of the body shows irritation it should be promptly and radically treated.

Lumps of all kinds should be looked upon with suspicion and especially in a woman's breast. It is always safest to consider the last named as cancerous or precancerous until a microscopic examination of the tissue shows it to be otherwise.

Continued infection of any of the tissues is risky from a cancer standpoint, such as gums, tonsils, nose, ears, bladder, kidneys, etc.

Continued abuse of the digestive organs and continued constipation are risky.

Leucorrhea or profuse menstruation in women should always be considered a sign of danger. Any discharge after the menopause is especially risky.

All of this means that everybody, men, women, and children should be thoroughly examined from time to time, and should know that small apparently inconsequential abnormalities must be looked after.

There are many simple, apparently innocent, conditions that may become cancerous. Doctors and patients should always be on the lookout for such conditions, so as to head off trouble.

The trouble which worries me the most is abnormal conditions in women. Every woman who has had a child has also a tear in the neck of the womb. In a very large proportion of cases, that tear does not heal but continues as a raw surface, an ulcer, causing no pain or discomfort, but producing a white discharge. The simplest treatment will usually cure the ulcer promptly.

Women, young, middle-aged or old, with or without having children may have ulcers or inflamed conditions which may lead to cancer but which, if discovered in time, can be easily cured. Every woman after confinement must be examined and looked after until entirely healed.

As I have urged many times before, two obstacles stand in the way of the discovery of cancer or conditions leading to cancer in

*Read by title at the sixty-first annual meeting of the Medical Society of Virginia, in Norfolk, October 21-23, 1930.

XUM

women. One is that the medical schools do not teach gynecology to the students in a practical way, and the other is that the general practitioners as a rule are not prepared to make vaginal examinations in a refined and decent manner.

I would strongly urge that every practitioner take up gynecology, at least to the extent of knowing how to make examinations and do minor work, and that he also arrange his office with a woman attendant so as to make examinations in an unobjectional manner.

I have recently read an article by Dr. William J. Mayo, one of the greatest men of the age, from which I shall quote several paragraphs.

"First, it can be said that cancer never develops in sound tissues, and this knowledge is manifested in the understanding of physicians of the danger of permitting sources of chronic irritation to continue. Second, in the early stages of malignant change surgical removal of the growth, or, in suitable cases, the use of radiotherapy gives a high percentage of cures.

"It is difficult, however, for the laity to appreciate to what extent cure is possible in cancer, and in their very fear of a condition which they believe to be hopeless they often delay surgical consultation. This widespread pessimism exists because when death occurs from cancer, the cause of death cannot be concealed, whereas persons who have been operated on successfully for cancer hide the fact that they have had malignant disease because general knowledge of it would stand in the way of their future advancement. As a consequence the public has known much of the horrors of the disease and little of its curability."

* * * * *

"It is equally probable that when a breach of continuity in the tissues occurs as the result of long-continued chronic irritation, the attempt is made first to heal the defect with normal cells, but in the course of time, as the reparative processes are exhausted, cells less and less mature are thrown into the breach, until finally embryonic cells, but the best that can be supplied, replace the normal epithelium and take on malignant change.

"This brings up an interesting side line of thought, and that is that the age of cells and their condition must play a prominent part in the development of malignant disease. Perhaps the reason cancer usually appears after middle age is that the cells of the body have lost the reparative power of youth, have a lessened immunity, and thereby have become more vulnerable. Again those organs of the body which have a relatively short heredity are more often involved than organs which we know to be more primitive and which might be said thereby to have gained hereditary resistance to the disease."

* * * * *

"Again, those organs of the body, the breast and the uterus, which undergo early senility, carry with them an increasing risk of cancer, and finally the only reasonable explanation why 90 per cent of persons do not have cancer and why 10 per cent do have cancer is that there is a varying degree of immunity in individuals to the cause or causes of cancer, which leads to the hope that resistance to this disease may be increased as it has been in other diseases of man."

I have told you absolutely nothing that is new in this paper, but the subject is so vitally important a one that we must continue to say these things over and over again until we get to the point that we are continually looking for early cancer and for conditions that may develop into cancer.

In antisepsis we have to be so thoroughly impressed with the necessity for extreme methods in every detail, that any breach of the simple rules of surgical cleanliness either in ourselves or in others, would act as a violent shock to us.

So in cancer education we must have it in mind all of the time, to look for conditions that may cause trouble, urge upon our patients, all of them, to be examined when it may be necessary, and themselves to look for signs of trouble. In this way only will cancer be controlled.

It is pitiful to see splendid lives shortened when they could have been saved. If we could train our patients and train ourselves in cancer prevention the incidence of cancer and the mortality from cancer would drop enormously. Probably 90 per cent of all cancers are either preventable or curable. Let us work to reach that record.

People must also be made to understand that quacks, those "vultures of evil," are doing untold harm in advising against prompt eradication. They must be taught that cancer in the early stage is *local* and may be destroyed,

and that excision and other radical removal of precancerous or early cancerous conditions are harmless.

This is a great work for humanity, my friends, a simple work, but one that will save many valuable lives and untold suffering.

Sarah Leigh Hospital.

VITAMIN B "COMPLEX" IN A CONCENTRATED AQUEOUS LIVER EXTRACT.*

By ALFRED CHANUTIN, PH. D., University, Va.

At the present time there is a great deal of interest in liver and liver products because of their use in pernicious anemia therapy. In addition the presence of vitamins in liver has been emphasized by a number of workers. In a recent circular published by the U. S. Department of Agriculture,[1] liver is listed as a good source of vitamin B "complex," which includes the anti-neuritic and anti-pellagra factors. There is not enough evidence available, however, to state the relative distribution of these two vitamins.

Recent studies have shown that meat and meat products are rich in vitamin G (anti-pellagra factor). Hoagland and Snider[2] have shown that beef and pork liver were rich sources of vitamin G. These livers were found to contain five to eight times as much of this vitamin as beef, pork or lamb. Aykroyd and Roscoe[3] reported beef liver to be richer in vitamin G than a large number of other food products.

It was thought that an assay of the vitamin B "complex" of a concentrated commercial liver extract would be of interest. If this "complex" is present to any considerable extent in the liver extract it may be in part responsible for the favorable reaction obtained in pernicious anemia and other conditions.

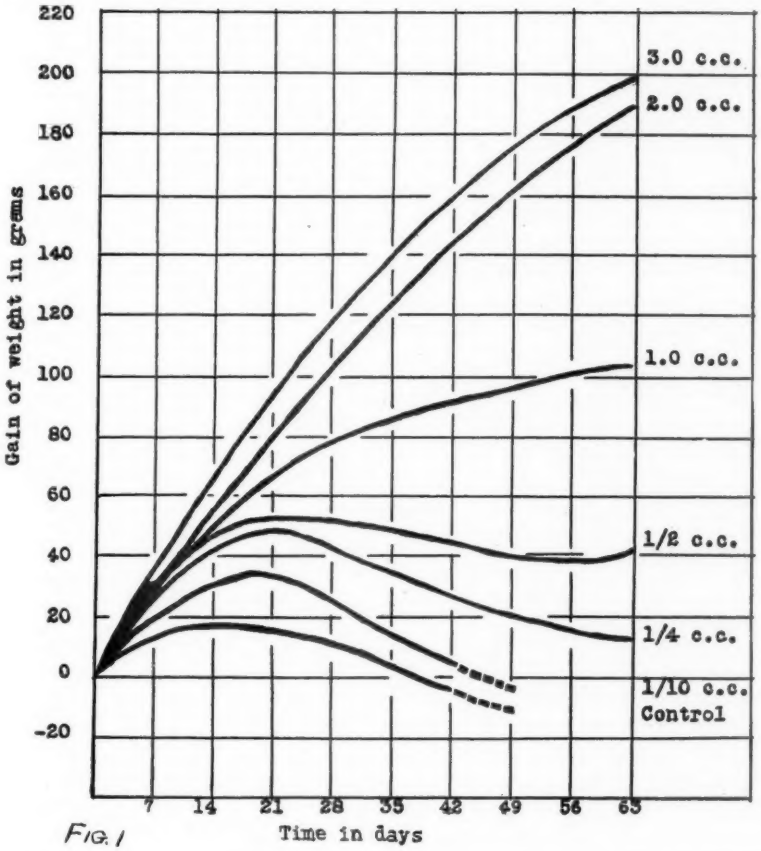


FIG. 1

*From the Biochemical Laboratory, University of Virginia.

These experiments have been conducted according to the method developed by Sherman and his co-workers.[4] Young white rats, aged twenty-eight to thirty days, were placed in individual cylindrical metal cages with false bottoms to prevent coprophagy. The young rats were fed a vitamin B and G free diet which was adequate for growth in all other respects. The liver extract was added to the basal diet in measured quantities each day. The basal diet consisted of extracted casein 18, dextrin 68, butter fat 8, cod liver oil 2, and salt mixture 4 (Osborne and Mendel). The animals were weighed twice a week and the food intake was recorded.

The liver extract used was a commercial product* made from the hog liver. In a private communication from the manufacturer it was stated that the liver was ground several times in a mill and then extracted with hot water. This extract was then concentrated in vacuo until a definite specific gravity was obtained. A small quantity of glycerol and sodium chloride was added for preservation of the concentrated extract. It is claimed that one ounce or 30 c.c. of the extract is equivalent to one-half pound of raw liver.

An analysis of several constituents of this extract was made. The specific gravity was found to be 1.23 and the ash content 8.22 per cent. A relatively high iron content of 25.9 mg. per 100 c.c. of extract was obtained.

The results of the experiments are presented in Figure 1 and Table 1. Animals receiving less than ½ c.c. of liver extract daily developed polyneuritis. The minimum daily maintenance dose is about ½ c.c. With increasing doses the animals grow rapidly and appear to be in excellent condition. There is comparatively little difference in the growth curve of the animals receiving 2 c.c. and 3 c.c. of liver extract daily.

Liver extract fed daily	No. of animals	Aver. initial weight	Aver. gain in weight	Aver. length of experiment	Aver. food intake for individual rat	Incidence of polyneuritis
c. c.		Gm.	Gm.	Days	Gm.	%
0	6	55.1	−11.1	47[1]	118.8	100
0.1	6	50.3	2.5	45[1]	156.3	100
0.25	6	43.1	14.0	59[2]	179.0	100
0.5	8	46.8	43.5	62	225.7	0
1.0	7	50.1	108.0	61	328.4	0
2.0	6	53.1	191.0	65	632.5	0
3.0	8	52.7	206.2	57	571.2	0

[1]all died.
[2]2 died.

Table 1.—Showing results of experiments.

*Liver extract E-29 furnished by the Valentine Meat Juice Company, Richmond, Va.

An accurate comparison of vitamin potency of a liver extract and other food products is not possible. It may be stated, however, that 2 c.c. of liver extract is roughly equivalent in vitamin B "complex" potency to 200 mg. of *dried* brewers yeast. From comparative figures of Sherman and MacArthur, this liver extract is many times richer than evaporated milk, skimmed milk and tomato juice. The foregoing evidence gives added justification for the use of liver and liver extract in conditions involving certain functional and dietary deficiencies.

Summary

A liver extract tested for its effects on pernicious anemia cases has been assayed for the vitamin B "complex" (anti-neuritic and anti-pellagra factors). It has been found to be relatively rich in this "complex" when contrasted with other foods already studied.

The author wishes to thank Mr. A. K. Turner for his help in this work.

Bibliography.

1. Smith, Sybil L.: Vitamins in Food Materials, U. S. Dept. of Agr., Circular 84, 1929.
2. Hoagland, Ralph, and Snider, George G.: *J. of Agr. Res.*, 41, 205, 1930.
3. Aykroyd, W. R., and Roscoe, M. R.: *Biochem. Jour.*, 23, 483, 1929
4. Sherman, H C., and MacArthur, E. H.: *J. Biol. Chem.*, 74, 107, 1927.

PROLAPSE OF VESICAL END OF URETER WITH STONE.*

By C. I. SEASE, M. D., Richmond, Va.

Mrs. H. F. D., white, female, married, age fifty-seven. First examined by me May 16, 1930, complaining of frequency of urination.

P. H.—Usual childhood diseases. No serious illness. Hemorrhoidectomy three years ago and removal of cyst from the cervix. Menses began at the age of thirteen. Married at twenty; had five children. No miscarriages. Youngest child is now thirteen years of age.

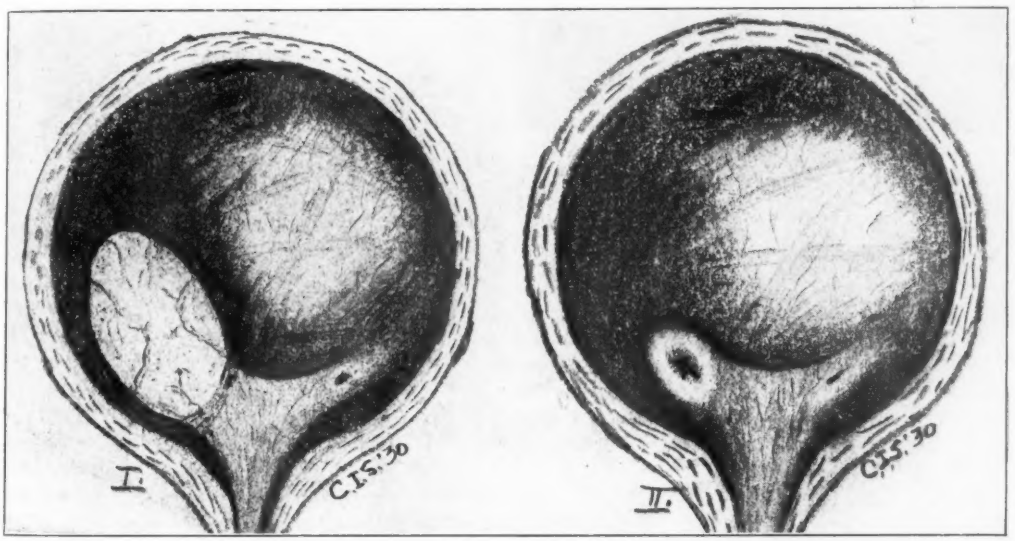
*Read at Staff meeting of Retreat for the Sick, Richmond, Va., October 27, 1930.

Menopause eighteen months ago at age fifty-five. Periods were regular and normal up until that time. She feels certain she has never had kidney colic or any similar attack of pain.

H. P. I.—Patient does not know just when her present illness began, but says she has had frequency of urination off and on for several years. She recalls having had medical treatment for it five years ago with only slight relief. For the past three months her symptoms have been greatly aggravated. She now voids every fifteen to thirty minutes during the day and three or four times during the night. There is no pain, and very little burning, but after voiding she feels that the act has not been completed, and straining only seems to hinder rather than help.

eight ounces of residual urine. The cystoscopic examination revealed a bladder full of trabeculae. The left orifice was pin-point in size. On the right there was a large tumor about 2 ins. long by 1 in. thick. It was fairly smooth, covered with small arterioles and venules, being attached to the right interureteric ridge and filling that side of the bladder. The free part of the tumor could be pushed back with the cystoscope, or to either side. Plate I gives my impression, fairly well, of the appearance of the tumor. The right ureteral orifice could not be seen.

Thinking I was dealing with either a large intra-mural stone, a fibrous tumor, or possibly a ureterocele, I immediately fulgurated the base and anterior surface of the tumor. I



Plates I and II.

Physical Examination shows a white woman about fifty-five, weight 114. Head, neck, chest, abdomen negative. Extremities negative. Blood pressure 175/110. Pulse 80.

Vaginal Examination.—Uterus and appendages normal. Vagina and perineum normal. Bimanually, a hard mass is easily felt, and it seems to be in the bladder, just to the right of the mid-line. Size about 2 ins. by 1 in. Shaped like a pecan. The impression is that it is a stone in the bladder, its position and partial fixation being unexplained.

Cystoscopy.—The bladder was catheterized after the patient had voided, and there were

used an insulated copper wire electrode which passed into the tumor without meeting any appreciable resistance. I also fulgurated the left orifice which was pin-point in size and elevated.

May 20th.—The patient has been fairly comfortable since the treatment. At 2:00 A. M. Friday, she had a severe pain in the bladder, accompanied by uncontrollable desire to urinate. Attempt to catheterize revealed a hard object in the urethra, which was finally pushed back into the bladder. At 8:00 A. M., however, the pain recurred. The patient was told to get into a tub of hot water and in a

few moments the stone was passed. The stone is probably calcium phosphate, is smooth, shaped like a pecan, and weighs 188 grains, size 1½ ins. by ¾ in. From this time the patient's symptoms of frequency were practically relieved. On May 23rd, June 5th, July 3rd, the redundant flaps were fulgurated.

August 5th.—Appearance as in Plate II.

Photograph of stone.

Both ureters were easily catheterized. Specimens from both sides were normal in quantity and rate of flow, and contained only an occasional cell. Injection of about 12 c.c. of acriflavine 1:5000 into the right ureter produced pain in the right kidney, suggesting that there is no hydronephrosis on that side. The patient has gained in weight. Sleeps well and feels entirely well. Blood pressure reading is now only 145/70 as against 175/110 when first seen.

Investigation by kidney function and pyelogram was declined because the patient's symptoms were so completely relieved after she passed the stone.

This case is interesting because intra-mural calculi of such size are not often seen, and also because of the manner in which the stone probably developed. A small ureteral stone could have come down from the kidney pelvis and lodged in the vesical end of the ureter and there increased to its present size; or this patient could have had a ureterocele in which a stone developed. The patient is sure she has never had any attack of pain even resembling kidney colic, and this point in the history would tend to negative the first supposition, though, of course, a small ureteral stone could pass with little or no symptoms.

On page 120, figure 320, *Urology*, Vol. II. Kelly and Burnam, there is a beautiful illustration of a prolapsed vesicle end of the ureter containing a stone which has an interesting resemblance to the case here reported.

Harnagel, *Journal of Urology*, 1923, Vol. X, pages 141-147, reports a similar case in which the stone was grasped with a cystoscopic ronguer forceps, pulled through the urethra and amputated.

In Kelly and Burnam's Urology, Vol. II, page 357, figure 471, there is a beautiful illustration of a prolapsed ureter into the bladder, forming a cyst. In Young's Urology, Vol. II, page 46, figure 531 is an illustration of a case of bilateral intra-vesical cyst of the lower end of the ureters, reported by Blumer, and on page 47, cuts C and D, is a case illustrated and reported by Young.

A cyst of the vesical end of the ureter should be a likely place for a calculus to form, and I believe that is what happened in this case.

611 *Medical Arts Building.*

REPORT OF A CASE OF VESICAL CALCULUS IN THE FEMALE.*

By W. CALHOUN STIRLING, M. D., Washington, D. C.

My only reason for reporting this case is the scarcity with which vesical stone is found in females, and, secondly, the almost entire absence of symptoms in the presence of such a large stone. Mrs. B. P., age fifty-three, seen for the first time on September 8, 1930. Patient consulted me regarding frequency of urination together with dysuria. She gave a history of an acute attack of frequency and pain on voiding, beginning about Thanksgiving Day, 1927. The onset was sudden and characterized by inability to void. No other symptoms were noted at that time. These attacks were periodic, lasting for several days, then disappearing for weeks at a time. Lately she has had a marked increase in the diurnal as well as the nocturnal frequency, together with rather marked tenesmus. There has been no blood at any time in the urine. The bladder pain is worse on exertion.

Past History: Patient had a subtotal hysterectomy May 5, 1926, for a fibroid. The operative record was found and no mention was made of any foreign body in the bladder at that time. She had the ordinary diseases of childhood, typhoid fever in 1900, and arthritis

*Read before the Hippocrates-Galen Medical Association, in Washington, D. C., October 9, 1930.

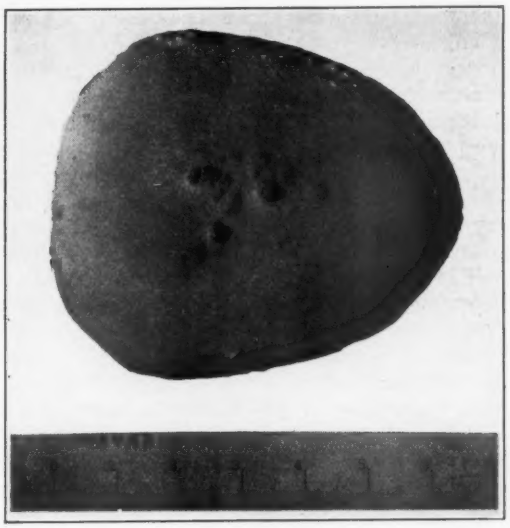
in 1910. No other serious illness. Menstrual history essentially normal; no children. No other serious illness.

Physical examination shows a well-nourished female adult. The blood pressure was 150 systolic and 80 diastolic; pulse rate was 72; temperature and respirations normal. The head and neck were normal, as was the chest. Heart sounds normal throughout and situated

Plain roentgenogram of bladder region showing large, oval, dense calculus. This plate shows the value of a preliminary picture in all urological cases.

within normal limits. The abdomen was negative with the exception of a mid-line scar reaching from the symphysis to the umbilicus. Some tenderness was elicited on deep pressure over the suprapubic area. Extremities and reflexes normal. A blood examination revealed eighty-five per cent hemoglobin and 4,520,000 red blood cells. The leucocyte count was normal. as was the blood chemistry. The phthalein test intravenously appeared in three minutes and was within normal limits. A plain roentgenogram was taken of the urinary tract, which revealed a large, dense shadow within the bony pelvis, measuring three and one-half inches long and two and three-fourths inches in diameter. The shadow was of a much greater density than the surrounding bone and more than half filled the pelvis.

A cystoscopic examination was done at this time and revealed a very large, grayish stone, situated in the bas-fond. Spicules were seen on the surface of the stone, and it was movable. The bladder mucosa was deeply congested and quite red, and showed evidence of long-standing irritation. The ureteral orifices could not be seen.



Picture of the stone after removal.

On May 10, 1930, a suprapubic lithotomy was done as the stone was considered too large to crush intravesically. The stone was extracted from the bladder with small obstetrical forceps, as it was rather hard to grasp and hold with the ordinary forceps. Convalescence was uneventful aside from a rather marked hemorrhoid protrusion, which delayed the patient's discharge for two weeks.

Comment

Keyes points out that stones occur in but two per cent of women, he having operated on seventy men and but one woman; his father, on two hundred fifty men and three women. Stones in the bladder may occur at any age though seen frequently between fifty and seventy years, i. e., in the prostatic age, as fifteen per cent of all prostatics have this complication. Residual urine with stagnation frequently results in the deposit of urinary crystals, followed by stone formation. In the ab-

sence of foreign bodies and local changes in the bladder, most of these stones are renal in origin and migrate to the bladder. These large stones are phosphatic in composition, fairly soft, and cast a rather dense shadow in the X-ray. The largest vesical calculus on record was in a man reported by Randall, in which a stone weighing four pounds was removed. Death occurred the following day. The largest stone removed in which the patient lived was one reported by Mitchell, which weighed thirty-eight ounces. The weight of this stone was one-quarter pound.

To refresh your mind I will briefly summarize the symptoms, diagnosis and treatment. Disturbance of urination, i. e., frequency, interruption of the stream, pain in the head of the penis, incomplete emptying and hematuria on exertion are the signs most commonly seen. The diagnosis is made by a combination of X-ray and cystoscopic examinations. Both should be utilized as some of these stones are dumb-bell in type and may be partially overlooked following either a cystoscopic or a plain X-ray. The writer reported a case of dumb-bell stone located in a bladder and diverticulum which had been partially removed elsewhere, followed by a recurrence of the vesical portion of the calculus.

Treatment: Lithotrity is a procedure of choice if the stone is of but moderate size and soft. Contraindications to the use of a lithotrite are very large, hard stones, the presence of diverticulum or marked prostatic enlargement, and severe disarrangement of the kidneys. Also, where the stone is partially incorporated in a foreign body introduced into the bladder, lithotrity is contraindicated. In the presence of the above enumerated complications, suprapubic lithotomy with drainage is the procedure of choice. The mortality is very low and the results excellent.

BIBLIOGRAPHY.

Keyes, E. L.: Urol. 1928, p. 290.

Randall, Alexander, *J. Urol.*, 1921, Vol. 5, p. 119-125.

Stirling, W. Calhoun: *J. A. M. A.*, 1925.

Columbia Medical Building.

DIARRHEA OF INFANTS.*

By SAMUEL H. NIXON, M. D., Christiansburg, Va.

The prolongation of the span of human life in the past generation has been a source of pride to the physician and a delight to the laity. This notable accomplishment has been made possible more through the reduction of infant mortality than through progress in any other phase of medical science. The defenseless infant is beginning to come into its own, because we adults are realizing that eventually it grows into manhood or womanhood, then directs the destinies of our nation. If we are to have healthy adults, we must have healthy babies. In the wake of our new interest has come pre-natal care, child clinics, improved infant hygiene, better environment and special interest in diseases of children. These improved conditions have given us a marked reduction of mortality in diarrhea of infants—the major disease of childhood.

It is during infancy or the first two years of life that diarrhea is most prevalent and most fatal. The reason for this is obvious: it is during this period of life that most stress is placed upon the digestive tract, since it is not developed and can only utilize the simple, easily digestible foods. The caloric requirements of infants are greater than those of adults in proportion to the weight, because metabolism is faster in a more rapidly growing body. Having an undeveloped alimentary tract with an increased digestive burden, we have all the conditions conducive to gastro-intestinal disorders.

Diarrhea is so common in infancy, and plays the major role in the disabilities of childhood, that we are inclined to regard it as a disease entity instead of a symptom. We should think less of diarrhea *per se* and more of the constitutional etiological factors and their effects upon the body as a whole. In addition to our summer diarrheas, we have gastro-intestinal disorders in infectious diseases, as pneumonia, scarlet fever, measles, etc., which require treatment; and unless we look further than the gastro-intestinal disturbance for the underlying cause, we shall not be able to prescribe for our patient intelligently. However, if we examine our little patients, the trouble is usually very evident. We shall not always be so fortunate as to ascertain the etiology of diarrheas very readily. The following group of diseases will serve to impress upon us the importance of regarding diarrhea as only a symptom of a disturbed gastro-intestinal tract, and the necessity of searching until we locate the provocative factor:

1. Amoebic dysentery is no respecter of age or climate. Until quite recently amoeba histolytica was thought to dwell only in tropical

*Read before the Southwestern Virginia Medical Society, at Christiansburg, Va., September 23-24, 1930.

or semi-tropical regions, but we know now that it is frequently found in temperate zones. Stool examinations, proctoscopic examinations, and X-ray of the colon detect the offender.

2. Tuberculosis of intestines with diarrhea is usually a terminal state of tuberculosis. It is most frequent from the ages of three to eight years. Chief diagnostic points are positive tuberculin test, tuberculosis bacilli in stools, and characteristic X-ray findings of colon.

3. Chronic ulcerative colitis is probably more common than we realized until we began to make proctoscopic examinations in cases of chronic diarrheas. Bargen's diplococcus can be isolated from the stool. X-ray of colon is valuable in diagnosis.

4. Typhoid fever usually begins with more or less gastro-intestinal disturbance. The constitutional symptoms, blood culture and Widal reaction soon reveal the true etiology of the diarrhea.

5. Scurvy very often escapes identification as a cause of diarrhea, chiefly because we do not consider it. A review of the child's deficient diet, purplish hemorrhagic gums, petechia, muscular soreness and gastro-intestinal symptoms make a symptom complex which is characteristic.

6. In intussusception an early diagnosis is imperative. If it masquerades as a simple diarrhea very long, the child loses its life. Characteristic features are sudden onset with severe pain, shock, frequent bloody mucous stools, straining and palpable mass in abdomen.

7. Proctitis may be catarrhal in nature, but it is often due to pin-worms, careless bowel irrigations and irritating rectal suppositories.

The most important and frequent of all diarrheas are those termed summer diarrheas of infants. It is to this class that I shall devote most of my attention. The preventive treatment should command a large part of our interest, for there are few diseases that give such gratifying response.

High atmospheric temperature is the most important etiological factor in summer diarrheas. It is during the hot summer months that infant diarrhea reaps its greatest toll in morbidity and mortality. The deaths from diarrhea are probably more than those from all other diseases of infants combined. The torrid weather of summer is often enough to cause an elevation of temperature above normal in a healthy child, thus reducing its digestive functions and predisposing to digestive disturbances. It is possible for only a small per cent of children to change from excessive heat to a cooler, more equable climate; so our attention must be directed to measures and means to keep the child well in spite of hot weather. This is accomplished through improving the child's environment and general hygiene. The child should be kept in a cool part of the house and out of the hot sunshine. The clothing should be light, bathing and feedings regular, bottles clean and sterile, etc. The water supply should be guarded, as polluted water often contains pathogenic organisms of diarrheas. It has been noted that, with improved water sanitation, there was a reduction of infant mortality from diarrhea. Mothers should be encouraged to nurse their babies, for artificial feeding readily takes second place of importance as an etiological factor in diarrhea of infants. Only about 5 per cent of these patients are breast-fed, so it is evident that contaminated milk is the chief offender. Milk should come only from tested cows and be handled under rigid sanitary conditions, as any filth or prolonged standing of milk rapidly increases bacterial count. Increase of bacteria is the offending agent in milk, and becomes noticeably harmful around one million per cubic centimeter. Of course, pasteurized milk is preferable because it has lower bacterial count. After the first two years children are affected less by bacteria in milk. In addition to milk, other foods are often impure and unfit for consumption. Mothers frequently give babies foods that are too heavy and indigestible, which is a common cause of gastro-intestinal upsets. Neglect of mild gastro-intestinal disorders predisposes to severe diarrhea. Less than 1 per cent of summer diarrheas begin abruptly with alarming symptoms. Mothers should be instructed by the physician at every opportunity regarding the early danger symptoms and measures for their correction.

Summer diarrhea claims our attention on account of its prevalence and high mortality. Although several forms are recognized, they so often merge that a sharp differentiation is impossible. It may be conveniently discussed under the following heads:

1. Acute gastro-intestinal indigestion.
2. Acute ileo-colitis or dysentery.
3. Chronic ileo-colitis.

4. Chronic intestinal indigestion or celiac disease.

5. Cyclic diarrhea.

The first two forms of diarrhea will be discussed together, since the symptoms are similar, and a sharp differentiation is often impossible. In acute gastro-intestinal indigestion the cause is intoxication either from contaminated food introduced into the alimentary tract or from by-products of incomplete digestion or both. Acute ileo-colitis has for its etiological agent the pathogenic organism Flexner's bacillus. Occasionally the infection is the primary cause and occurs in epidemic form, but it usually is secondary to other forms of gastro-intestinal disorders.

The treatment in these types of diarrhea is more or less symptomatic and depends upon the nature and urgency of the symptoms. In the beginning, food should be withheld and only water given. Should vomiting be present and it be decided that the child needs a purgative, and they usually do, calomel is the purgative of choice. Water should be stopped and the stomach given a complete rest until vomiting subsides. The calomel should be followed in six or eight hours by castor oil or milk of magnesia. Where vomiting is not present, castor oil or milk of magnesia is given as the primary purgative. In the beginning of the illness it is advisable to give purgatives unless contra-indicated. The contra-indications are profuse watery stools, retching, vomiting and symptoms of collapse. If these symptoms are present, apply external heat, give strophanthus, brandy and morphine hypodermically. Where there is vomiting without diarrhea, high colonic irrigations are useful. The remedies given orally to control diarrhea are paregoric, Dover's powders, bismuth subnitrate and tannic acid compounds. If bismuth subnitrate does not change the color of the stool dark, sulphur may be added to facilitate the change to sulphid of bismuth, the active form. Great care must be exericised not to reduce the number of stools so low as to prevent adequate drainage of the intestinal canal, for this will increase absorption of toxins with rise of fever and often convulsions. Should convulsions supervene, use hot mustard baths until the seizure is over, then high colonic irrigations. In case the convulsions persistently recur, chloroform inhalations are useful during the attack. The advent of sodium amytal has given us another drug with potentialities to be considered in the most obstinate cases. In the case of frequent stools of blood streaked mucus with pain and tenesmus, the time-honored remedy of laudanum and starch water as a rectal injection is very useful. Hot turpentine stupes to the abdomen are gratifying when the child has pain and distention.

For the control of high fever, water by mouth is of prime importance; other useful adjuncts are cold packs, alcohol sponges and colonic irrigations. When there is dehydration, with resultant toxemia from incessant vomiting and uncontrollable diarrhea, saline or glucose in saline given by hypodermoclysis or intra-peritoneally will often tide the child through a crisis.

A most difficult part of the management of diarrhea of infants is the selection of foods that the infant can digest and at the same time preserve its nutrition as far as possible. I believe the dietetic regimen requires more judgment and experience than any other phase of the treatment. Osler aptly said, "One man's food may be another man's poison." This axiom is doubly true of healthy infants. Then, small wonder at our perplexities in prescribing for the acutely ill!

After the effects of the initial purgative, cereal water and dilute chicken broth are allowed. When the temperature returns to normal and the acute symptoms subside, there is need for more nourishing food if we are to prevent the state of malnutrition. At the same time we must use the utmost precaution to prevent dietetic relapses. When the baby is breast-fed it should be given cereal water or sugar water before feedings, and the nursing time reduced to one or two minutes. If there is no inconvenience from the milk, the nursing time may be increased.

For the bottle fed, protein milk with cereal water in one-fourth dilution is well tolerated, and may be gradually increased to half milk and half cereal water, and continued for a few days, when cow's milk is substituted. Kerley advocates adding one-half ounce of skimmed milk to cereal water for one feeding on the first day. If this causes no inconvenience, an increase of one-half ounce is made at every second feeding the following day, and an increase of one-half ounce at every feeding the third day. Thereafter, if all goes well, an increase of one-half ounce is made in each feeding every day until the child is taking his daily feedings of skimmed milk one-half strength.

Condensed milk is more easily digested than cow's milk and it may be used when cow's milk disagrees or where sanitary handling of cow's milk is impossible.

We have the powdered milks, which are convenient and sanitary, at our command, and they are a valuable addition to our dietetic armamentarium.

Mellin's food has its rank of admirers and probably its virtues too. There is no lack for a variety of infant foods, but probably the interests of our little patients would be served best by a thorough knowledge of a few, rather than a speaking acquaintance with many.

Chronic ileo-colitis and chronic intestinal indigestion or celiac disease are continuations of the acute forms, and require very much the same regimen. Probably a change to a cooler climate will help these unfortunate children more than any other remedial measure. In celiac disease or chronic intestinal indigestion ripe bananas have been heralded by a few authors as almost a specific dietetic treatment.

Cyclic diarrhea is a periodic diarrhea without apparent cause, and occurs in those children who have recently had severe gastro-intestinal disturbance or who have inherently poor digestion. They have specifically a low digestive tolerance to fats and carbohydrates, and they are improved by reduction of these substances in their foods. I have had occasion to see several children with this complaint who were being fed goat's milk, which is very high in fat content. All of these patients recovered promptly by reducing the percentage of fat in their food.

Phlegar Building.

DIARRHEA IN INFANTS.*

By R. M. DeHART, M. D., Floyd, Va.

Diarrheal diseases are the most frequent form of disturbance in infancy, with a greater mortality than from all the acute infectious diseases combined. The term diarrhea includes all conditions attended by loose evacuation of the bowel. This results from many causes and is a symptom of many diseases. You may find diarrhea as a prominent symptom in otitis media, pyelitis, appendicitis, typhoid fever, bronchopneumonia, etc.

Only the severe forms of diarrhea are discussed in this paper—the infectious and the noninfectious. The severe forms are commonly known as "summer diarrhea," "summer complaint," and "cholera infantum." The majority of the severe cases occur during the first two years of life.

The etiology of the noninfectious type has not been definitely determined. External heat and high humidity, especially when the infant is too heavily dressed, seem often to be the causative or at least accessory factors. There is a growing impression among many pediatricians that parenteral infections, especially of the ear and naso-pharynx, are primarily responsible. Artificial feeding, improper food mixtures, over-feeding and infected milk also constitute some very important etiological factors.

The infectious form of diarrhea may be caused by both forms of the dysentery bacillus, the gas bacillus of Welch, streptococcus, and the baccillus pyocyaneus, introduced from without—in milk, water, raw foods, or foreign bodies.

Symptoms and Differential Diagnosis: The onset is usually acute in both forms, but may be preceded by indigestion in either. Vomiting, loss of appetite and loss of weight are common to both. In fermentative diarrhea, the temperature is apt to be higher, with a decline at the end of four or five days. In the infective type, the temperature is not often high except at the very beginning, but runs a prolonged course over a period of several days or weeks. The abdomen is usually distended in the fermentative form, but there is very little pain or tenesmus present, while the infective type presents a flat or sunken abdomen, and usually pain with tenderness, especially over the colon. The character of the stools is the main point of differential diagnosis. The fermentative type usually produces a green, watery, irritating stool, acid to litmus, and with undigested particles of food. The infective type is characterized by the presence of blood and pus, very little odor, alkaline in reaction, brown in color, and non-irritating. While the absence of blood in the stool neither excludes infectious diarrhea or proves fermentative diarrhea, its presence is proof of an infection.

Meningeal symptoms, as muscular twitching, restlessness, stupor, coma and convulsions, are common to both types of diarrhea.

Before taking up the treatment proper, one should mention prophylaxis. We should encourage breast feeding, properly supervising artificial feeding, advocate boiling all milk

*Read before the Southwestern Virginia Medical Society, at Christiansburg, Va., September 23-24, 1930.

during the first two years of life, and educate against gross dietary indiscretions. The foods of all babies should be reduced during the hot summer months. The mothers should be instructed not to over-clothe the babies during hot weather.

TREATMENT: The type of diarrhea you are dealing with should be determined, if possible, before beginning any form of treatment. In mild cases where there is no dehydration, a preliminary catharsis is indicated. For this I use castor oil with a few drops of paregoric. Then, all food should be stopped for a period of twelve to twenty-four hours, depending on the severity of the case. The starvation period is absolutely essential. During the starvation period, if the baby is not vomiting, water should be given freely, sweetened with saccharin, but if the baby is vomiting, water should be given in small amounts and often. At the end of the starvation period, these patients must be fed, and, in my opinion, this is the chief part of the treatment, and should be directed towards changing the culture-medium in the intestines so as to produce an inhibitory action on the growth of the organisms and at the same time nourish the child. The nature of the food depends on the type of diarrhea. In the fermentative type with the greenish, watery, acid, fermenting stools there is a distinct indication for a particular type of food. The disturbing organisms here thrive on a carbohydrate medium. With the excessive fermentation, there is also an interference with the digesting of fats. So the proper food must be high in protein and with a minimum of fats and carbohydrates. The requirements are well met with protein milk. In two or three days, sugar in some form should be added, the rapidity of its increase depending on the baby's condition. I think the red karo syrup is the best form of sugar to use since it is a mixed sugar and causes less disturbance in the intestinal tract. After the sugar is added, the baby can be kept on this formula for a few days, then the protein milk may be gradually substituted by boiled skimmed milk. Another useful food in this type of case is lactic acid milk.

In the infectious type of diarrhea, where the stools are alkaline, non-irritating, with blood and mucus, we are dealing with a proteolytic organism with toxic end products. The protein milk given in the above type of case is contra-indicated in this type of case. Indications here are for a high carbohydrate diet with low protein and fats. It is usually best to begin with cereal waters and add one-fourth skimmed milk, boiled with cereal waters and cane sugar. The cereal water may be gradually replaced by boiled skimmed milk, and, finally, add whole boiled milk.

High saline irrigations, if properly given, act well by flushing the lower bowel, and at the same time add to the fluid intake.

There are two serious complications to watch for in severe diarrheas,—acidosis and suppression of the urine.

In the severe cases with dehydration, characterized by pinched, ashen facies, depressed fontanelles, sunken eyes, wrinkled skin which stands up in folds when pinched, marked toxemia with vomiting, scanty urine and irregular respiration, it is not a question of feeding or of medicines, but a question of administering fluids in every possible way.

Fluids may be given by mouth, bowel, subcutaneously, intravenously, intraperitoneally and intrasinusly. When a baby has a diarrhea and vomiting, fluid by mouth or bowel is very ineffective. This is an emergency case, and here is the place where heroic measures must be used in order to save life. You can give from 200 to 300 c.c. of normal saline subcutaneously with a 50 c.c. Luer glass syringe and needle. This procedure may be repeated every six to eight hours. You may also give the same amount of normal saline into the peritoneal cavity with no difficulty and very little danger. In the latter procedure, it is better to use a gravity apparatus, such as an old salvarsan column with rubber tubing and an ordinary intravenous needle with a short bevel, introduced in the median line about one inch below the umbilicus.

If the baby is under one year of age, intrasinus therapy is comparatively simple and safe if a needle guard is used. In severe cases of acidosis, glucose and insulin intrasinusly is a life-saving procedure.

If the baby is very restless and vomiting, morphine grs. 1/60 is very helpful to a six-month-old baby.

AN IDEAL APPENDECTOMY.*

By M. B. HIDEN, M. D., Warrenton, Va.

The operation which I shall describe has been developed at the Fauquier Hospital, War-

*Read at the sixty-first annual meeting of the Medical Society of Virginia, in Norfolk, October 21-23, 1930.

renton, Va., and at the Loudoun Hospital, Leesburg, Va., and has been used successfully at these hospitals for about two and one-half years.

In order that an appendectomy may be ideal or as near so as possible, the following should obtain:

Operate immediately after diagnosis is made: the earlier, the better, no matter how well the patient may feel.

The patient should be neither very obese nor much emaciated.

It is better, of course, to have a subject neither extremely young nor markedly senile.

This operation, however, works well in the extremely fat, the emaciated, the aged and the very young.

It is also quite satisfactory in ruptured or gangrenous cases and in cases with many adhesions, even if the appendix is retrocecal or in any other abnormal position.

The skin incision, not over two inches long and often less, is made just external to and just below the anterior superior spine of the ilium and on an imaginary line radiating from the umbilicus. After loosening the skin and the fat from the underlying tissues over a small area, the incision is pulled upward and inward until it is just internal to and slightly above the anterior superior spine. Then, close to the ilium we separate the muscles after the manner of McBurney. The peritoneum is pulled upward from the iliac fossa and is opened as far posteriorly as possible, that is, external to the cecum and internal to the bone.

After delivering the appendix, the meso-appendix is caught with a series of clamps while being dissected away from the appendix. The appendix is tied off, though this may not be necessary. A purse string of chromic catgut number 0 is used. The appendix is severed, its stump is cauterized and turned in. In tying the purse string, the free end is left about three and one-half inches long and the needle end much longer. Then with the single catgut and beginning opposite the meso-appendix, the cecum is sewed over so as to bury the stump the second time. This line of suture ends over the meso-appendix and with the free end the catgut is tied so as to make the suture double. Then, with this double suture, the meso-appendix is sewed over and tied down to the cecum.

The small opening in the peritoneum is tied in the manner that you would tie an artery or the mouth of a bag. As this opening is to a great extent between the cecum and the fossa, it may not be necessary to close it at all.

We close the internal oblique and invert its edges with one stitch of catgut. By lapping the edges, the external oblique can also be closed with one stitch. It would probably be all right not to use any sutures in these muscles.

The skin incision when released goes back to its original position, external to the spine, and is closed with a subcuticular stitch of fine catgut. The incision can be dressed with collodion or a very small piece of gauze held in place by adhesive and the abdomen is not restricted.

When possible this operation should be done under a local anesthetic. We use novocain, one-half per cent, with three drops of adrenalin to the ounce. After thoroughly blocking off the area, twenty to forty cubic centimeters of the solution are injected into the right iliac fossa intra-peritoneally. This renders the peritoneum in this region insensitive and the appendix can then be delivered without pain and without abdominal cramps.

Advantages of the above procedure:

The small intestines are not handled.

We enter the abdomen over the base of the appendix and the appendix is easily found.

Little or no gas is developed.

There is much less nausea.

The operation can be done quickly.

The patient sits up in a chair on the second or third day and walks out of the hospital and goes home on the fifth day.

Breathing and coughing tend to pull the skin incision together and not apart.

There is very little pain and the patients are quite comfortable.

Post-operative hernia cannot develop.

The scar, usually the only thing connected with the operation seen by the patient, is very small.

There is no surgical shock.

The abdomen is entered through an area that is not very vascular and has relatively little fat.

It is seldom necessary to tie a blood vessel.

Patient can go home on the fifth day.

We believe that the following points may be somewhat original or at least they are not in general use:

The position and the direction of the skin incision.

The manner of opening the peritoneum.

Injecting the anesthetic solution intra-peritoneally.

DEMENTIA PRECOX.*

By JOHN R. GILL, A. B., M. D., Petersburg, Va.
Central State Hospital.

Dementia precox is in many respects the most important of all the psychoses. It is estimated that more than one-fourth of all insanity is due to this disease. Between thirty and forty thousand people yearly fall victims to this dread malady. There are twice as many hospital cases of dementia precox as there are of tuberculosis. The onset of dementia precox usually occurs soon after adolescence or in the first flush of manhood and womanhood. This disease takes as a majority of its prey the young developing manhood and womanhood of the world.

Dementia precox is often called schizophrenia, which means there is a fundamental splitting of the emotional, the thought and the motor processes. It is for this reason that dementia precox patients are termed unpsychological. They feel, say and do things that are so different from a normal person's reactions.

Dementia precox is a chronic progressive mental disease in most cases and leads to mental deterioration.

Etiology: William A. White states that heredity is a doubtful factor as the cause of dementia precox. The future patient might show some mental dullness in his early youth, but frequently shows unusual and even brilliant mental powers. Wolfsohn, of Zunich, found hereditary taint in about 90 per cent of his cases.

Von Monakow has advanced the theory that the choroid plexus fails to act as a selective filter for the products of metabolism and endocrine secretions. The choroid plexus thus loses its power to neutralize and detoxicate the internal secretions.

The endogenous toxins have been stressed recently a very great deal as the possible cause of dementia precox. The internal secretions from the testicles and ovaries have been especially emphasized.

The most recent development is the psychogenic theory as the cause of dementia precox. Meyer considers dementia precox from a biological standpoint as the result of being unable to adjust with the development of unhealthy biological reactions. The abnormal child with neuropathic tendencies is a fertile field for the development of a future dementia precox.

Various difficulties arise in people of an abnormal character make-up, especially in those people who have a shut-in disposition. This type of personality does not meet difficulties openly and frankly. They are inclined to be seclusive, not mixing with people, and do not make friends.

Pathology: Very little pathology has been found in the brain of the dementia precox patient. The nuclei of some of the brain cells shows destruction and the consequent disintegration of these brain cells. Some lipoid deposits have also been found in the brain cells.

Mott has found that the vast majority of male dementia precox patients show a regressive atrophy of testicles. In females the ovaries show a degeneration of the nuclei and the consequent destruction of ovarian cells with replacement by fibrous tissue.

On the basis of these researches, Mott formulated the hypothesis that dementia precox is the expression of an inherent lack of vitality in the fertile ovum which manifests itself biologically in a progressive failure of nuclear proliferation in the productive organs and in a lack of durability in the cortical cells.

Symptoms: I will first give some of the general characteristic symptoms of dementia precox.

A majority of dementia precox patients show a seclusive or shut-in type of personality. They do not like to visit or confide in other people, but prefer to stay by themselves.

I have already mentioned splitting of the emotional, the thought and motor processes. It is due to this splitting that a dementia precox can kill his wife or best friend without a vestige of sorrow or emotion. It is this fundamental disturbance in coordination which produces failure of voluntary attention and the lack of interest which these patients show in themselves and their environment. This lack of interest produces a marked indifference in the patient for practically everything. There is also a gradual blunting of the emotions which leads to emotional deterioration. Their expressions of joy or sorrow are shallow and of short duration, if they occur at all. News of a death

*Read before the Mental Clinic Section at the sixty-first annual meeting of the Medical Society of Virginia, Norfolk, Va., October 21-23, 1930.

or birth is received with the same lack of emotion. Accompanying this emotional deterioration there is a dilapidation of thought and judgment. These defects progressively increase as the disease advances. There are four types of dementia precox:

1. Simple.
2. Paranoid.
3. Hebephrenic.
4. Catatonic.

1.—*Simple Type.*—The simple type of dementia precox is usually insidious in its onset. At first the person shows a lack of interest in things. He no longer visits and mixes with other people, but prefers to stay at home by himself. He associates less and less with other people. Transitory delusions and hallucinations may be present. A large number of criminals, hoboes, prostitutes and eccentrics belong to this group, because they cannot adjust to the complex conditions of modern society.

2.—*Paranoid Type.*—The paranoid type is characterized by the prominence of numerous delusions. The delusions may be either of persecution or of grandeur. Frequently the same patient will have ideas of both persecution and grandeur. A patient may think that some enemy or group of enemies may be trying to harm him or interfere with him in some way. Again, the patient may have numerous expansive ideas of grandeur and think that he is a king or some exalted person. We have four or five patients at Central State Hospital who imagine that they are God, and numerous kings and queens. These ideas of persecution and grandeur are usually well fixed and systematized in the patient's mind.

The paranoid type of dementia precox have hallucinations in the various fields of hearing, vision, taste, etc. The hallucinations of hearing are called voices and are the most frequent in occurrence. These voices usually tell the patient disagreeable and ugly things. These voices frequently threaten them. The patient may have visions of angels, God, dead relatives, or anything. The patient may imagine that he has been poisoned. Some of these patients talk very freely about their delusions. Others are very guarded in all of their statements. The paranoid form is dangerous, as they might imagine a total stranger is one of their enemies, and try to avenge themselves on this enemy by some act of violence. The paranoid builds an elaborate world of phantasy in which he lives.

3.—*Hebephrenic Type.*—The hebephrenic type sets in with a more rapid onset. They become indifferent and frequently appear to brood over something. The hallucinations appear and involve both the auditory and visual fields. The voices may tell the patient disagreeable things at first, but later the voices tell the patient pleasurable things. The patient will sit by the hour listening to the voices, smiling and grimacing. They thoroughly enjoy listening to the voices. If any delusions are present, they are usually of a silly nature. A patient may think that he does not have a head, or has a living rat in his stomach, etc. The hebephrenic may have numerous delusions which are absurd, grotesque and silly. They may show mannerisms.

4.—*Catatonic Type.*—The catatonic type is divided into two stages, which may irregularly alternate. They are catatonic stupor and catatonic excitement. In catatonic stupor the principal symptoms are stupor, negativism and muscular tension. In this stage, the patient is usually mute, and pays no attention to questions. The mutism is one of the manifestations of negativism. The negativism shows itself in many ways, such as refusing to eat, and paying no attention to the calls of nature. They allow the bladder and rectum to become over-loaded with urine and feces. Saliva collects in the mouth for hours until the mouth will hold no more and it dribbles from the mouth.

Any attempt to move the body meets with muscular resistance and tension. In some patients you find a condition of flexibility. The extremities may be placed in any desired position and will be maintained there indefinitely until gravity and fatigue causes them to fall. This is known as waxy flexibility. The patients in this state obey the commands that are given them.

In the condition of catatonic excitement the patients are constantly talking, shouting and showing increased psychomotor activity. These actions are absurd and are not directed consistently to any end. These patients are well known for their impulsive acts which they commit suddenly without warning.

Prophylaxis: Preventive measures are dependent upon early recognition in child of precox potentialities. Try to develop a normal child out of the abnormal. The child should be interested in athletic sports, amusements and in other children. Psycho-analysis may be of some aid. It is important to talk freely to the child about the mysteries and problems of sex.

XUM

The child should be protected as much as possible from the trials and stresses of life and should be educated to become self-reliant in the face of difficulties, and be able to adapt himself to his environment.

Treatment: After the development of the dementia precox, institutional care and occupational therapy are recommended for the patient. It is necessary to keep the patient occupied both mentally and physically to retard the deterioration. The patient preferably should be encouraged to some form of outdoor occupation. Psycho-analysis may be of some value in the treatment of the patient.

MENINGITIS OF OTITIC ORIGIN—REPORT OF CASES.*

By
G. B. TRIBLE, M. D. F. A. C. S.,
and
C. J. BOWNE, M. D.,
Washington, D. C.

The middle ear cavity should be considered an accessory nasal sinus, modified by its relationship with the organs of hearing and equilibrium, and by its peculiar extensions by pneumatization into the temporal bone. In childhood, with the short, relatively wide Eustachian tube, every cold has its manifestations in that cavity; in later life, with the increased length and tortuosity of the tube, there is less communication by direct extension. The position of the tubal tympanic orifice is in the most dependent portion of the cavity, so that nature has generously provided a drainage outlet, as well as a portal of entry. In spite of the involved anatomy, as compared with the other sinuses, work has been early, painstaking and advanced in the histology, pathology and physiology of the structures, and a review of the literature will show the same operative—non-operative struggle in the treatment of infections of the middle ear and its adnexa that is now raging in the other sinuses. Fortunately, the work has rather crystallized in the case of ear surgery, and one of the factors that prompted this standardization has been the fear of meningitis in middle ear suppurations. That this is no empty fear, our own personal experiences bear out, and we all can bring out memories of cases that have had this unfortunate termination.

In contra-distinction to these non-contagious secondary cases, there must be considered cerebrospinal fever, which is a communicable disease due to a gram negative diplococcus, the meningococcus, characterized by a gradual invasion of the body; first, a local infection of the upper respiratory tract, then an extension to the blood stream, and, later, after perhaps five days to seven weeks, a localization in the meninges.

Prognosis in the secondary cases, even with our present knowledge of methods to be employed in treatment, is almost uniformly bad. The cases to be reported represent different types of meningeal involvement encountered, and the vagaries they presented re-awakened a desire to go out into this field anew.

In a summary of cases by Coates, Ersner, and Persky, seen in Coates' otological service at the University of Pennsylvania from the years 1922 to 1929, inclusive, 644 mastoid cases were admitted and the cause of death in seven were given as menigitis, while brain abscesses were reported in twice that number as a cause of the fatality.

In this country, some of the most thorough and painstaking work and investigation in the field of intradural complications either from middle ear or sinuses has been made by Eagleton, and he believes that with a more complete study of the mechanism of invasion, more can be done to decrease the almost one hundred per cent fatalities, which at present are a feature in meningitis of this type.

In the cases to be reported, the one which showed the classic picture of secondary meningitis, complicated by diabetes, untouched by surgery with the exception of a spinal puncture, was a complete recovery. In the cases to be considered as meningitis, those are not here taken to include extension meningitis, such as occur from a contiguous intracranial abscess.

The infective agent varies, and may be any one of several groups. It is not uncommon for tubercular meningitis to be confused with meningeal manifestations from ear suppuration, and it is probable that a more careful post-mortem would have exposed the pre-existence of a tuberculous infection, in some cases complicated with a secondary later organism.

A protective serous meningitis is not infrequently found adjacent to any suppurating area, and is interpreted as being caused by a few organisms penetrating by a blood or lymph route from the ear, and these exert a toxic effect here on the choroid plexus and cause an

*Read before the Homeopathic Hospital Medical Staff, June, 1930.

increased production of the cerebospinal fluid, with rise of pressure, symptoms of severe headache, vomiting and vertigo. These cases may present paralysis of the external rectus, even complete oculomotor paralysis, or possibly retino-papillary edema of a mild degree. With them, the clinical picture is radically changed by a puncture or by an operative removal of the original source of infection. There may be delayed or latent meningitis, in which there is a lapse of considerable time from the middle ear infection until the onset of the meningitis. This type of case more frequently occurs in elderly patients in whom the process in the tympanum may be entirely healed, but there may be isolated, minute abscesses in the posterior surface of the bone from which extension spreads.

In suppurative conditions of the cerebral contents, the pathway of an invasion for both meningeal infection and a deeper suppuration is very similar. There may be direct invasion by micro-organisms; or there may be invasion by either the vascular or perivascular routes. In an infection of the venous route, there is an infective thrombophlebitis, while in the arterial route and in the perivascular route the infection extends in a different direction from those of venous invasion, one with the course of the blood stream, the other against it.

Under the auspices of the Triological Society, material is collected and reports made from the Otological Research Laboratories at Johns Hopkins, and so far over seven hundred post-mortems, under direction of Crowe, has shown:

1. There is extension of the otitis media to the labyrinth and meninges by way of the round window, stapediovestibular articulation and fissura ante-fenestram.

2. Extension of primary meningitis to the labyrinth may likewise occur by way of perivascular spaces of the auditory nerve, the perivascular spaces of the modiolar vessels, and the codilear aqueduct. This accounts for the post-mortem mastoid, and middle ear involvements found in primary meningitis.

The question of surgical trauma as a factor in the production of both infections of the dura and sub-dural space must be considered, especially in the temporal region. The dura in this area is held firmly to the brain, and the infection will pass directly through the dura and sub-dural space into the substance of the temporal lobe. The combination of meningitis and a brain abscess is not unusual. Naturally all brain abscesses, if at all extensive and superficially located, are accompanied by meningitis.

All investigators of the German and Austrian schools lay great stress on careful blood studies as giving an index to grave complications. In the intracranial complications, the displacement of the Schilling is found to the left as a rule. The diffusion of hydrogen ion concentration in the cerebrospinal fluid in otitis with complications shows a displacement toward the acid side. On the basis of the cerebrospinal changes, two general groups can be distinguished. In the one group are the acute inflammations associated with a rise of fluid pressure, plus albumin content, very little change in the glycogen, negative globulin reaction and scanty lymphocytes. The second group are more often chronic inflammations, with intracranial complications, and increase of the total albumin, rise of pressure, diminution of dextrose, negative globulin, and scanty polynucleosis.

In the meningism of pneumonia or intestinal intoxication, there may be an increase of the protein content of the fluid, but not of the cell count. Schippers and Peters report that in the presence of meningitis fluorescein sodium, given by mouth in doses of 20 mg. per kilogram of body weight, passes into the cerebrospinal fluid in higher than normal concentrations.

Meningitis is subject to physiological control, and the factors involved are brought out by Eagleton, who believes Nature's process of defense occurs in the sub-dural space. The excessive secretion of fluid, containing few micro-organisms with a slight exudate, soon disappears, for, according to Eagleton, the sub-dural cells, which are similar to those in the peritoneum, proliferate and readily form adhesions and wall off the area of inflammation, but when it reaches the stage of purulent leptomeningitis, from the vertex to the lumbar cord, and the fluid on puncture contains organisms, no present method can relieve it.

Here is the necessity for an early diagnosis, while the infection is limited to circumscribed areas; expose bone and then open dura and let out the infected fluid. Inflamed dura is thicker and walled off, and a localized immunity exists.

Division naturally falls into three surgical groups:

1. Secondary to lateral sinus thrombophlebitis, frequently with a cerebellar abscess.
2. Middle fossa cases, infection through the tegmen tympani.
3. Labyrinth cases by extension.

The cases selected show the various clinical types, except the third group.

Case I.—Morrell, man, age sixty-six years, gave a history of chronic suppuration, left middle ear, which had gone on for years. Had applied for some treatment of his ear. Became immediately worse after treatment. Had intense pain in his head and neck, and by midnight or early morning became irrational. On being seen at the Homeopathic Hospital, April 9, 1930, was unconscious and in convulsions. There was considerable edema and swelling around the back of the ear, and, with the hope of finding a localized focus, an exploratory operation, after consultation, was considered advisable.

Spinal puncture was made during the beginning of anesthesia, which was impossible in his restless condition without an anesthetic, and the fluid was found cloudy. Rapid exploratory operation was made on his mastoid and dura in the mastoid and upper mastoid area. The lateral sinus was exposed, and free incision made in the dura through lower part of the middle fossa after needle puncture. No pus, but flaky exudate was found. Death occurred late that night. No post-mortem was permitted.

White count at the time of admission was 28,200 with 85 per cent polys.

Spinal fluid report showed numerous polymorphonuclear cells, and the smear showed short chain cocci, probably streptococci; also some diplococci, type not determined, probably atypical streptococci.

Case II.—Col. C., man in middle fifties, gave history of middle ear abscess two months previous to entering hospital. Abscess had cleared up apparently, but low grade headache had continued. Being called by his family physician who suspected a meningitis, we advised hospitalization and patient was brought to Garfield Hospital. Radiographs of the suspected mastoids showed completed cloudiness and breaking down on the right. After consultation, operation was determined upon. On spinal puncture, which gave cloudy fluid, the mastoid was thoroughly opened and found full of granulation and osteoid tissue, the beginning reparative process of nature. Dura of the middle fossa was exposed. The lateral sinus which was exposed but inadvertantly opened, was packed off. A wide incision was made in the dura of the middle fossa, apparently showing some increase of tension. The patient did not recover from his unconscious state which had preceded the operation, but apparently breathed much more freely and lived about three days.

Discussion: In these cases, about the only thing we can say is we have not yet found nature's secret of repair, nor the process of her defense menchansm, which must exist, or there would have been a fatality in all the other cases. This second patient was very obdurate in refusing follow-up treatment for the middle ear abscess. He stated that he felt all right, and, even after the vomiting and meningitis set in, contended it was merely due to a dietetic indiscretion.

Case III.—Mrs. C. F., age fifty-eight, weight 219 lbs., gave a history of the usual diseases of childhood, including pneumonia and grippe in the recent past. She had had four children, all of whom died in infancy, and four miscarriages. Examination showed a negative Wassermann and Kahn. Cardiovascular system was markedly involved, with blood pressure high, compensation beginning to break, blood sugar ranging from 83 to 148 mgms. per 100 c.c. of urine, negative acetone and diacetic acid. About eight weeks prior to entry into the hospital on June 29th, 1926, she developed an infection of the left middle ear, following a cold. Seven paracenteses had been done, with no relief from pain and no cessation of the discharge. She was given 5 to 10 units of insulin b.i.d., special diet, and the ordinary ear irrigation of boric acid solution. She stayed in the hospital until July 14th, when she was discharged after some improvement, but was readmitted August 10th. Her X-ray had been taken and the report was definite involvement of the left mastoid. On her re-admission on August 10th, she showed beginning stupor and projectile vomiting, which had started about twelve or twenty-fours before admission, and which had been preceded by persistent, progressive and continuous headache, and constant pain in the left mastoid area. The usual symptoms of meningitis were present and a Toby-Ayre lumbar puncture was made, the initial pressure being .6. Rise with compression of both jugulars was 1.4. On compression of left jugular alone, it was .6. On compressing the

right jugular alone, it was 1.4., showing that there was obstruction of the left jugular or lateral sinus, while the right side was clear. Left internal jugular was found collapsed and was ligated. Death occurred on the 12th, autopsy findings showing a purulent meningitis, particularly on the convex surface, with left sinus thrombosis and pus in the middle and left internal ears.

Discussion: This is about the result one would expect in a condition of this character, and a question naturally arises as to whether or not it would have been best to make a radical exposure, in spite of the diabetes, before the pathologic condition had advanced to such a degree.

Case IV.—Mrs. E. S., age thirty, weight 132 lbs., height 64½ inches. Family history showed father was dead, age sixty-four; mother was living, age sixty-three, but had high blood pressure; four brothers were living and well; there were four sisters, the oldest with diabetes. The patient had had usual diseases of childhood, including diphtheria; teeth negative; tonsils negative; two children were living and well. She had been under treatment for diabetes for the past four years, taking insulin b.i.d. She had never been in a coma. About January 5th, she had symptoms of an upper respiratory infection, which had infected others in the family. On January 7th, acute suppurative otitis media, right, developed, necessitating myringotomy under ethyl chloride anesthesia. Normal reaction continued for about three days, with some local tenderness, then constitutionally an acidosis developed which was treated by Dr. Castell. In a few days the acute condition subsided; temperature was normal by the 14th, and continued so for about three days, when she began to complain of such an intense pain and headache one night that an injection of morphine was required to relieve her. When she was seen in consultation about ten o'clock the next morning, she was showing signs of a beginning meningitis, and a tentative diagnosis of meningitis was made. She was sent to George Washington Hospital, being admitted about 2:15 P. M. She was then semi-comatose and irrational, temperature ranging around 105.6 per rectum. Laboratory findings showed blood sugar 234 mgm., urine strongly positive for sugar; w.b.c. 20,800; 90 per cent polys. Spinal fluid pressure was 22 mgm. The fluid itself was purulent, and contained 4,750 white cells per m.m., 97 per cent polys, while a smear showed a short chain coccus and diplococci, which, on later culture, proved to be a hemolytic streptococcus in pure culture. Smears from the ear showed a mixed infection, staphylococci and streptococci, with the streptococci predominating. A radiograph taken later showed the right mastoid with a diffuse density, very few clearly definite mastoid cells still containing air. The general appearance was that the bony septa were being broken down, giving a worm-eaten appearance. The patient continued unconscious for three or four days; temperature dropped to normal after forty-eight hours, and by January 21st she was entirely clear mentally. She complained of some headache and backache, occasionally an abdominal pain and double vision. There was some urinary retention, but by the 23rd she was apparently normal. She was allowed to leave the hospital shortly after this, got out of bed on February 13th, and was downstairs in her house on March 7th. The treatment given was that indicated by her diabetes, with the exception of the routine cleansing of her ear and the instillation in the canal of gentian-violet.

Comment: Was the decreasing of blood sugar by a more thorough anti-diabetic routine the factor, making it impossible for the infecting organisms to survive, which must have been of a strain requiring a pabulum of high sugar value, the cause of this recovery?

The next cases are important in showing, in the first, a corresponding dural reaction to frontal sinus extension, while the others showed, in our opinion, a terminal ear invasion from a primary meningeal infection

Case V.—Mr. C., age seventeen years, gave a history of the usual infections of childhood, with some tendency to upper respiratory involvements. Developed infection of the right antrum and right frontal while at school. Was treated by specialists in Nashville; had several antrum punctures; later, here, had a Luc-Caldwell opening of the antrum which cleared up the antrum, but intense headache continued. Finally, after he had convulsive seizures of an epileptoid type, an external frontal was done. The frontal was found filled with pus, under great pressure, and, on exploration the posterior wall, appeared absolutely devitalized. The wound was left wide open, no attempt being made to continue the opening into the ethmoids. The patient made a very stormy

convalescence, and one day had as many as seven convulsions, each time turning the head to the left. Spinal puncture was done. Pressure was not increased, but 24 cells to the mm. were reported. Prognosis was extremely grave. The patient, after a rather long period of weakness and depression, made a complete recovery.

Discussion: There was apparently a cerebral meningitis just back of the frontal sinus, a silent area, which was walled off by Nature's defense method, and the patient recovered. There is, of course, the possibility of later trouble for delayed frontal lobe abscesses are not unknown.

Case VI.—Mr. E. O. was the son of a confrere who had a particular dread of just what later happened, and who stated that a son of his professor in otology, while a medical student, had died from an unsuspected ear infection, leading to meningitis.

In this case, being forewarned, every day examination was made of the ears. A mild naso-pharyngitis was about all that appeared, with a little reddening occasionally in the right drum and a slight temperature. He was seen by several consultants and nothing was made out. Finally, a right supra-orbital herpes zoster appeared. On examination later a collection of serum behind the drum showed, so a paracentesis under gas was performed, a few drops of serum escaping. The incision closed in twenty-four hours, but later intensification of the cerebral symptoms led to the advice to the parents of the desirability of a mastoid exploration. When this was done, no pathology was found in the cells, but a few drops of pus appeared in the mastoid antrum. A spinal puncture was made immediately and the fluid was found cloudy. The pus from the mastoid antrum and the spinal fluid both gave pure culture of pneumococcus. Death occurred in about five days, the typical meningeal cry and other symptoms appearing.

This case for years has been pondered over, and, while not attempting to defend an error, if there was one, it still seems probable that this was an extension downward along the pathways Crowe has since brought out.

1801 *Eye Street, Northwest.*

In complaining of what the world has done for you, it is well to stop and consider what you have done for the world.—*Selected.*

THE PHYSICAL DIAGNOSIS OF HEART DISEASE

With the Aid of Diagrams, Tables, and Notes.

For Students, Instructors, and the General Practitioner.‡

By OSCAR SWINEFORD, JR., B. S., M. D., University, Va.

In determining the presence or absence of heart disease in his patient, the examiner is confronted with two problems; namely, what to look for, and how to interpret what he finds. The extent of his findings will vary directly with the systematic orderliness of his search. The accuracy of his interpretation will vary with his ability to visualize a mechanism which can produce what he finds.

The attempt is made here to make these problems easier. Accordingly, the things to look for, together with the procedures necessary for finding them, are listed first (Part I). Next (Part II) are brief discussions of how the more frequent findings of heart disease are brought about and how they manifest themselves. Finally (Part III), there is a drill, by means of diagrams and detailed references to the tables and text, in working out the diagnostic criteria of chronic valvular, hypertensive, thyroid and congenital heart disease and of aortic aneursym.

For arbitrary reasons some relevant topics have been omitted or barely mentioned, others have been stressed unduly perhaps. Disturbances of rhythm and conduction, of the myocardium, pericardium, and coronary circulation are merely mentioned. Symptomatology, prognosis and treatment are not included. Statements relative to controversial points are intentionally didactic for the sake of brevity. For more detailed study of any topic herein the reader is referred to the textbooks and articles in the bibliography.

PART I

I.* In the examination of the heart and great vessels, we expect disease to manifest itself (a) by alterations from the normal size, shape, rate, rhythm, and character of the individual sounds, (b) by the appearance of abnormal impulses, thrills, murmurs, signs of congestion, cyanosis, blood pressure changes,

---

‡From the Department of Internal Medicine, University of Virginia.

*Roman numerals, I, refer to divisions of the text by topics. Small letters, (a), refer to subdivisions of the topics. Arabic numerals, 1, refer to further subdivisions by items. Reading will be facilitated by disregarding these until one comes to the drill in Part III.

There are no detailed references to the appended bibliography.

and undue influence upon contiguous structures.

The diagnostic procedures employed, at rest and after exercise, for the detection of these manifestations of cardiovascular disease are: inspection,[1] palpation,[2] percussion,[3] auscultation,[4] blood pressure determinations,[5] electrocardiographic[6], and Roentgen-ray[7] examinations.

A brief explanation of the pathological physiology of some of the outstanding diagnostic manifestations of heart disease, with notes on a few diagnostic procedures, follows:

Part II

II. *Murmurs* are produced experimentally in a tube, through which fluid is flowing under sufficient pressure, by introducing abrupt changes in its caliber. They are believed to be audible vibrations produced by eddies formed when the fluid is "jetted" into a dilated portion of the tube. A narrowing (stenosis) produces murmurs by virtue of the relative dilatation beyond it.

In a normal heart the caliber sequence and pressure are such that murmurs are not produced by blood flowing through it. Accidental murmurs, discussed below, are exceptions.

In the diseased heart the necessary caliber changes may be produced by (a) stenosed, or (b) incompetent valves, (c) dilatation of the aorta, (d) dilatation or narrowing of the pulmonary artery, (e) congenital defects, (f) sufficient dilatation of the aorta, pulmonary artery or one of the chambers to bring about a relative stenosis or functional insufficiency of a valve.

Murmurs are designated as systolic[1] or diastolic[2] in accordance with the phase of the ventricular cycle in which they occur. They are further described as soft or rough, low or high pitched, blowing or rumbling, early, mid or late, long or short, crescendo or diminuendo, loud or faint. Note is also taken of the direction of transmission and where the murmur is heard best. In general it may be said that murmurs are transmitted[3] in the direction of the jet or stream which produces them.

There are several lesions which produce more or less characteristic murmurs. It should be emphasized that atypical murmurs of the more common aortic and mitral lesions may simulate the less frequent pulmonic and tricuspid murmurs. Table I gives the outstanding differential features. (See page 656.)

The differentiation between organic murmurs, secondary to structural changes, and the variously termed "functional,"* "accidental"[4] or "haemic" murmurs, the significance and mechanism of production of which are as yet unknown, presents an unceasing problem, the importance of which is obvious.

In general the criteria by which these benign murmurs may be distinguished are: They are systolic in time, soft and blowing, and of short duration: they are usually heard best in the pulmonic[5] area, less often the point of maximum intensity is at the apex or in the aortic area; they are rarely of wide transmission; they occupy a varying position in systole and are usually transient; they are apt to be accentuated by expiration and diminished by inspiration; other signs of heart disease are absent: when, as is frequently the case, they are accompaniments of anemia, fever, physical or mental strain, or thyrotoxicosis,[6] the correction of these conditions will probably result in the disappearance of the murmur.

It is said that an accidental murmur may be demonstrated at some time in about half of all normal persons.

III. *The Heart Sounds* mark the alternating systolic and diastolic phases of the ventricular cycle.

The first sound[1] is due to the composite effects of ventricular contraction plus the closure of the A-V valves. It is normally loudest at the mitral and triscuspid areas. Variations in its intensity in any individual offer a rough measure of the vigor[2] of ventricular contraction.

The second sound[3] is due to the closure of the semilunar valves. It is loudest, therefore, at the aortic and pulmonic areas. In youth the pulmonic second sound is apt to be accentuated. This gives way with age to a predominance of the aortic second sound.

A third sound occurring during diastole is frequently heard in normal young people, in mitral stenosis,[4] and in failing hypertensive hearts.

In any individual the intensity of the sounds is modified by the depth and character of the intervening chest wall and lung tissue, and by fluid if present. Accentuations of sounds are commonly noted in those conditions which

*Unfortunately the term "functional" has been applied indiscriminately to the murmurs indicated in II(f), as well as to the accidental or haemic type. It is believed that much confusion would be avoided if the term "functional" were applied only to those murmurs occurring with the dilatations mentioned in II(f) above. The benign, unexplained murmurs are more accurately called "accidental" than "functional."

XUM

cause an increase in metabolism; such as, excitement, exertion, fever, thyrotoxicosis[5] and severe anemia.

Pathologically, accentuation of the first sound is said to be caused: (a) by contraction of incompletely distended[6] ventricles, and (b) by the rapid contraction of well filled, well compensated ventricles working against the burden[7] of regurgitant valves or arterial hypertension.[8]

Accentuation of the second sound is caused: (a) by closure of the aortic[9] or pulmonic[10] valves in the presence of an increased arterial tension, and; (b) by sclerotic[11] changes in the valves or neighboring arteries.

First sounds are decreased: (a) by the slow contraction induced by aortic[12] or pulmonic[13] stenosis; (b) by weakness of the ventricular muscle.

Second sounds are decreased: (a) by loss of elasticity of the aortic[14] and pulmonic[15] valves, especially from stenosis, (b) by low[16] arterial tension.

Reduplication of sounds and the gallop rhythms occur under conditions which may conceivably, if not actually, cause an asyn-

TABLE I

CHARACTERISTICS OF VARIOUS ORGANIC MURMURS

LESIONS	MURMUR	PITCH	CHARACTER	TIME	DURATION	HEARD BEST	TRANSMISSION	THRILL
1. Mitral regurgitation	Systolic	High	Loud, rough blowing	Early, (masking the first sound at apex)	Long	At apex	To left axilla and back	Present
2. Mitral stenosis	Diastolic	Low	Rumbling	Mid	Variable, usually short	At and to right of apex	Localized	Present or Absent
			Crescendo	Late				
3. Aortic regurgitation	Diastolic	Medium	Soft blowing	Early	Variable	Second right interspace and along left border of sternum	From second right interspace towards apex	Slight or absent
4. Aortic stenosis	Systolic	High	Loud, rough blowing	Early	Long	Second right interspace	Widely and into vessels of neck	Present
5. Tricuspid regurgitation	Systolic	High	Loud, rough blowing	Early	Long	At and to left of xiphoid	Localized	Present
6. Tricuspid stenosis	Diastolic	Low	Rumbling	Mid to late	Variable, usually short	At and to left of xiphoid	Localized	Present
7. Pulmonic regurgitation	Diastolic	Medium	Soft blowing	Early	Variable	Second left interspace and along left border of sternum	From second left interspace down left border of sternum	Absent
8. Pulmonic stenosis	Systolic	High	Loud, rough blowing	Early	Long	Second left interspace	Not into neck	Present
9. Ventricular septal defect	Systolic and diastolic	High	Loud, harsh	Early	All of systole into diastole	Third and fourth left interspace	Localized	Present
10. Patent ductus arteriosus	Systolic and diastolic	High	Loud, harsh (to and fro)	Early	All of systole into diastole	Second left interspace	Into left carotid	Present

chronous production of the right and left components of the altered sound. Such conditions are, conceivably: (a) an abnormal pressure in either the pulmonary artery[17] or the aorta, (b) delayed bundle branch conduction, (c) asynchronous[18] filling of the ventricles, (d) adhesive pericarditis.

IV. *Shocks* are readily palpable accentuations of the heart sounds.

V. *Thrills* are palpable vibrations, usually murmurs, sometimes pleural or pericardial friction rubs, and, occasionally are merely due to a vigorous[1] heart action in a thin person.

Pathologically, stenosed[2] valves, aortic

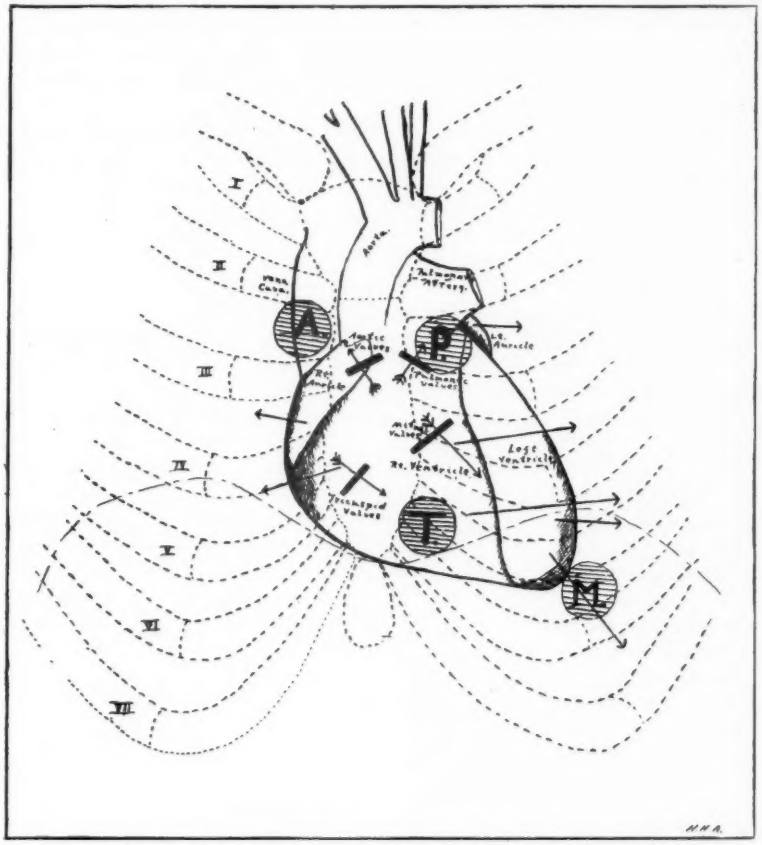


Fig. 1.—Diagram of the anterior aspect of the heart and great vessels showing:

the anatomical valve areas;

the auscultatory valve areas;

the normal direction of the blood stream through the valves and the approximate direction of the usual transmission of sounds and murmurs originating in them;

the usual direction and interspace in which hypertrophy and dilatation of each of the four chambers is manifested anteriorly.

Reduplications are common in normal people.

The mode of production of reduplicated sounds and of the third sound is a controversial field.

aneurysm[3] and congenital[4] anomalies produce the more intense thrills. Incompetent[5] valves may produce them. In Graves' disease[6] there is a thrill, typically, in the thyroid and the precordium.

VI. *Hypertrophy and Dilatation* may be expected in any chamber of the heart which is subjected to a sufficient and sustained increase in the amount of work it must do. Such an increase rarely, if ever, occurs in a normal person.

Pathologically a sufficient and sustained handicap may be imposed by: (a) incompetent valves, (b) stenosed valves, (c) arterial hypertension in the systemic or pulmonary arteries, (d) adhesive pericarditis, (e) myocarditis, (f) thyrotoxicosis, (g) congenital defects.

Dilatation occurring alone follows a temporary demand, usually sudden, which is excessive for the dilating chamber. Failure results unless the demand is removed or compensated for.

Hypertrophy alone is unusual.

When these phenomena occur together they add to the efficiency of the chamber and thus serve to compensate for the abnormal burden. As a corollary, the presence of these phenomena is indicative of a burden, past or present, requiring compensation, i. e., of cardiovascular disease.

Hypertrophy of the left ventricle[1] is suggested by a forceful impulse to the left of the mid-clavicular line in the 5th or 6th interspace. A diffuse precordial impulse transmitted to the epigastrium suggests right ventricular[2] hypertrophy.

To detect the enlargement of one or more chambers, which will obviously alter the size and shape of the heart (Fig. 1), one resorts to palpation, percussion, X-ray studies and the electrocardiogram.

VII. *Stenosed Valves*, by obstructing the normal progress of the blood stream; (a) produce murmurs which are characteristically rough[1] and accompanied by thrills. They are systolic[2] in time, if ventricular emptying is impeded. If auricular emptying is hindered, they are diastolic;[3] (b) add to the work and induce hypertrophy of the chamber which must force blood beyond the obstacle; (c) lessen or eliminate the valvular components of sounds incidental to their closure, obviously more striking in aortic and pulmonic lesions (III[3]); (d) lower the arterial[4] or ventricular[5] tension beyond the lesion; (e) predispose to congestion, with consequent increase in pressure, behind the stenosis.

VIII. *Regurgitant valves*, by allowing a reflux of blood which has previously been advanced, (a) produce murmurs which are systolic[1] if ventricular contraction initiates the back flow; if there is a return of blood from the arteries during ventricular filling they are diastolic[2]; (b) add to the work, with consequent hypertrophy, of the chambers which must pump the regurgitant blood twice; namely, those chambers *into which* and *from which* the back flow occurs; (c) produce congestion, with consequent increase in pressure, in the vascular system normally protected from such a back flow by competent valves; (d) tend to lessen the valvular components of the sounds incidental to their closure; (e) necessitate a greater pulse pressure in aortic or pulmonic insufficiency in order to maintain an adequate mean pressure.

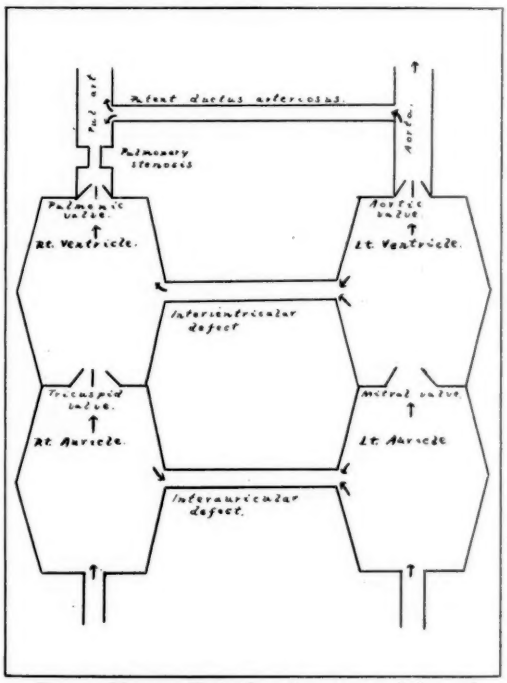


Fig. 2.—Diagram illustrating the common lesions of congenital heart disease.

IX. *Congenital Heart Disease* is the result of prenatal endocarditis, usually associated with sclerosis, or an error in development. The infections have a predilection for the pulmonary valve. The developmental errors are most often an abnormal persistence after birth of some phase of the foetal circulation. Many of these lesions are incompatible with life. Among the survivors, the presence of cyanosis[1] and clubbing[2] of the fingers and toes is classical, but not invariable.

Multiple lesions are found typically.

The commoner lesions are stenosis[3] of the pulmonic valve or atresia of the pulmonary artery, interauricular septal defect[4] (patent foramen ovale), interventricular septal defect[5] and patent ductus arteriosus.[6]

Rarer anomalies are coarctation (stenosis) of the descending aorta, hypoplasia of the aorta, transposition of the aorta and pulmonary artery, and dextrocardia.

Many minor defects are discovered only at autopsy.

X. *Cyanosis* is to be expected in any condition in which there is a subnormal oxygen saturation of the peripheral blood. It is commonly seen in heart disease, certain pulmonary conditions, polycythemia, methemoglobinemia, lowered oxygen content of the inspired air, and various diseases of the peripheral circulation.

Cardiac cyanosis manifests itself chiefly in the cheeks, ears, lips, and nail-beds of the fingers and toes.

The disturbances in heart disease preventing normal oxygenation are: (a) congenital septal defects, which shunt venous blood back into the peripheral circulation; (b) mitral lesions and left heart failure, which produce pulmonary congestion; (c) pulmonic and tricuspid lesions and right heart failure, which produce peripheral congestion.

The mechanism producing cyanosis cannot always be demonstrated.

XI. *Aneurysmal Dilatation* of the aorta is usually a mechanical sequel to the destructive and fibrosing sequence of that syphilitic process which generally begins just above the root of the aorta and extends upward into its ascending, transverse and even descending portions, resulting in a distensible weakening of the vessel wall. The same process often extends downward into the aortic ring and valve, producing aortic regurgitation and narrowing of the mouths of the coronary arteries. A similar process may occur in any artery.

Aneurysm of the aorta makes itself known by virtue of its singular rhythmical expansile pulsations,[1] which, together with a progressive increase in size, produce telling pressure effects[2] upon adjacent structures. The location of the aneurysm in the ascending, transverse or descending portion determines the individual hazard of the near-by sternum, ribs, trachea, bronchi, lungs, esophagus, recurrent laryngeal and sympathetic trunks, large veins, and vertebral column. The familiar manifestations of pressure upon these structures are: variable types of pain, a tracheal tug, dyspnea, cough, bronchial stenosis and its sequelae, dysphagia, dysphonia, pupillary inequalities, and venous congestion which is often unilateral.

That aneurysm exerts a *damping effect* upon the arterial tension beyond it is suggested by: (a) the inequality of the pulse and blood pressure in the right and left arms when the process is in the transverse arch, between or involving the innominate or left subclavian artery, (b) the frequently noted reduction of the high pulse pressure of aortic regurgitation or of a previously existing hypertension.

That it has a *recoil effect* is suggested by the accentuation[3] of the aortic second sound.

The caliber change is conducive to the production of a murmur.[4]

A normal vessel subjected to continuous high pressure tends to elongate and enlarge. Arteriosclerotic vessels become tortuous.[5]

The fluoroscope is a most important factor in the diagnosis of aneurysm.

XII. *The left recurrent laryngeal branch of the vagus nerve*, which loops under the arch of the aorta where the ligamentosum arteriosum joins it, may be stimulated or paralyzed by pressure: (a) of the prominent pulmonary artery and left auricle of mitral disease and (b) of an aneurysm of the left half of the aortic arch. The common occurrence of dysphagia, dysphonia, and cough in these conditions is thus explained, provided, of course, direct pressure on the trachea, bronchi, and esophagus are excluded.

XIII. *Changes in brachial blood pressure determinations* are the result of changes in resistance in the systemic vessels or of function in the left ventricle or aortic valve. The sphygmomanometer, then, is of diagnostic value in: (a) aneursym (q. v.); (b) differentiating pulmonic and aortic valve lesions; (c) certain arrhythmias; (d) detecting left ventricular weakness, as evidenced by an abnormal lability of the blood pressure in response to normal demands upon the circulation: (e) in detecting and differentiating those conditions associated with hypertrophy of the left ventricle as listed in Table II.

XIV. *The electrocardiogram* is indispensable to the recognition of the several disturbances of rate, rhythm and conduction.[1] It is often invaluable in differentiating between

XUM

coronary accidents and acute abdominal conditions, in formulating a prognosis, in following the progress of a case, in estimating operative risks, and in avoiding over-digitalization. It has a singular usefulness in indicating the diagnostic auricular and right and left ventricular hypertrophies of some of the congenital anomalies and of chronic valvular and hypertensive heart disease.

TABLE II

Condition Causing Hypertrophy of the Left Ventricle	Systolic Pressure	Diastolic Pressure	Pulse Pressure
Aortic regurtitation	High or normal	Lowered	High[1]
Aortic stenosis	Low	Low normal	Low[2]
Hypertension[3]	High	High	High
Thryotoxicosis[4]	High or normal	Normal	High or normal
Mitral regurgitation	Normal	Normal	Normal[5]

The electrocardiographic criteria of hypertrophy are:

(a) *Auricular hypertrophy.* Enlargement of the P-wave, often with prolongation and flattening or bifurcation of its apex. There are no electrocardiographic criteria for differentiating right from left auricular hypertrophy.

(b) *Right ventricular hypertrophy* (*preponderance*). The initial deflection of the R-wave in Lead I is downward. In Lead III it is exaggerated and upward.

(c) *Left ventricular hypertrophy* (*preponderance*). The initial deflection of the R-wave in Lead I is upward. In Lead III it is exaggerated and downward.

(d) Confusing tracings are frequently produced by changes in the position of the heart and in intraventricular conduction.

XV. *Roentgenologic examination*, which includes the use of the Fluoroscope, Teleoroentgenogram (7-foot plate), and Orthodiagram will usually disclose: (a) enlargement of the right[1] or left[2] auricle, right[3] or left[4] ventricle, pulmonary artery,[5] aorta,[6] (b) an abnormal rate rhythm, or excursion, (c) aneurysm,[7] (d) pericardial effusions or adhesions.

With the electrocardiogram, the teleoroentgenogram offers a splendid permanent record readily available for subsequent comparisons.

XVI. *Decompensation.* When the diseased heart can no longer sustain the burden imposed by overwork, toxemia, or progressing pathological changes, it fails. The more obvious manifestations of failure are due to congestion[1] of the lungs, extremities, liver, gastro-intestinal tract, brain, and kidneys.

Earlier signs heralding congestive failure, for which one must search, are: a tachycardia which is disproportionate in degree and duration to a given amount of exercise; a change

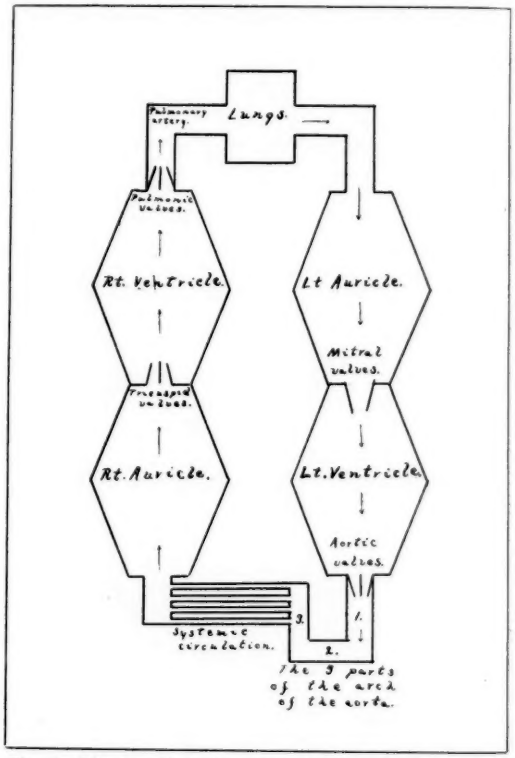


Fig. 3.—Diagram illustrating the normal course of the blood stream through the right heart, pulmonary system, left heart and systemic vessels. Possible dilatation of the ascending transverse, and descending portions of the aorta are indicated.

Stenosed valves and increased tension in the vessels impede the normal course. Incompetent valves allow a reversal of the normal course.

By referring to the diagram and to the text one should be able to predict the characteristic thrills, shocks, murmurs, accentuations of sounds, hypertrophies, congestions, electrocardiographic and X-ray findings of the various valvular and arterial dysfunctions.

in the intensity of the sounds; a change in the character and intensity of murmurs and thrills; a change in the relative duration of systole and diastole; an increase in the lability of the blood pressure; dilatation; and the appear-

ance of an arrhythmia, namely, extra systoles, bigeminal pulse, pulsus alternans, paroxysmal tachycardia, auricular flutter, auricular fibrillation, and heart block. If failure appears these changes may entirely obscure the diagnostic signs of the lesion at fault.

It should be emphasized, however, that failure is by no means the inevitable sequel to each of these phenomena.

Part III

In order to illustrate the diagnostic criteria of the various phases of heart disease listed below, detailed references to the preceding text, tables and figures will be inserted. If the impression is given by the following paragraphs that each, or even most, of the typical signs of a given lesion must be elicited in every case, the purpose of this paper will be defeated. A diagnosis is frequently made, with reasonable certainty, from only two or three cardinal signs; e. g., one would unhesitatingly diagnose aortic regurgitation upon finding the characteristic murmur (Table I) and pulse pressure (Table II).

XVII. *Mitral Regurgitation* (Fig. III) is usually rheumatic in origin (XXIX(1)), sometimes it is caused by an active infection of the valve, or, in the elderly, by arteriosclerosis. Functionally the valve may become incompetent when there is an uncompensated dilatation of the left heart (II(f), footnote*), as in failure, severe anemia, fevers, and thyrotoxicosis.

The diagnostic criteria are:

1. A systolic murmur (II(b),(1),(3); Table I (1); VIII (1)).

2. Accentuation of the pulmonic second sound. (VIII(c); III(3),(10)).

3. Physical, X-ray, and electrocardiographic evidence of hypertrophy of the left auricle. (I(1),(2),(3); VI(a); Fig. I; VIII(b); XIV (a); XV(2)).

4. Physical, X-ray and electrocardiographic evidence of hypertrophy of the right ventricle. (I(1),(2),(3); VI(a),(2); Fig. 1; VIII(c); XIV(b); XV(3)).

5. Physical, X-ray and electrocardiographic evidence of hypertrophy of the left ventricle. (I(1),(2),(3); VI(1); Fig. I; VIII(b); XV (4)).

6. Suggestive evidence, such as

a. Cyanosis (VIII(c); X(b)).

b. Reduplication of the pulmonic second sound (III(17)).

c. A systolic thrill at the apex (V(5); Table I(1)).

XVIII. *Mitral stenosis* (Fig. III) is almost always rheumatic (XXIX(1)), rarely arteriosclerotic. The large left ventricle of aortic regurgitation and sometimes of hypertension may cause a relative (functional) stenosis of the mitral valve (Austin Flint). (II(f), footnote*)).

The diagnostic criteria are:

1. A diastolic murmur (II(a),(2); Table I(2); VII(1),(3)).

2. Accentuation of the pulmonic second sound (VII(e); III(3),(10)).

3. Accentuation of the mitral first sound (III(2),(6)).

4. Physical, X-ray and electrocardiographic evidence of hypertrophy of the left auricle. (I(1),(2),(3); VI(b); VII(b),(e); Fig. I; XIV(a); XV(2)).

5. Physical, X-ray and electrocardiographic evidence of hypertrophy of the right ventricle. (I(1),(2),(3); VI(b),(2); Fig. I; VII(e); XIV(b); XV(3)).

6. Suggestive evidence, such as

a. Cyanosis (VII(e); X(b)).

b. Reduplication of the pulmonic second sound (III(17)).

c. Reduplication of the mitral first sound (III(18)).

d. A prominent third sound (III(4)).

e. A diastolic thrill (V(2)).

f. A systolic shock at the apex (IV).

g. Signs of pressure on the recurrent laryngeal nerve (XII(a)).

h. Signs of mitral regurgitation (XVII).

XIX. *Aortic regurgitation* (Fig. III) is usually of luetic or rheumatic origin (XXIX (2)), occasionally arteriosclerosis or an active infection may be the sole cause.

The diagnostic criteria are:

1. A diastolic murmur (II(b),(2),(3); Table I(3); VIII(2)).

2. A high pulse pressure (VIII(e); XIII (b); Table II(1)).

3. Physical, X-ray and electrocardiographic evidence of hypertrophy of the left ventricle (I(1),(2),(3); Fig. I; VI(a),(1); VIII(b); XIV(c); XV(4)).

4. Suggestive evidence, such as

a. A diastolic thrill (V(5); Table I(3)).

b. Signs of aneurysm (XXIX).

c. Signs of mitral or aortic stenosis (XVIII; XX).

d. Pallor.

XUM

e. Corrigan Pulse.

f. Capillary Pulse.

XX. *Aortic stenosis* (Fig. III) is almost always rheumatic (XXIX(1)), rarely arteriosclerotic. The dilated first portion of the aorta of luetic aortitis, or, less often, of hypertension may produce a relative stenosis of the aortic valve (II(f), footnote*).

The diagnostic criteria are:

1. A systolic murmur (II(a),(1),(3); Table I(4); VII(1),(2)).

2. A systolic thrill (V(2)).

3. Marked diminution or absence of the aortic second sound (III(14),(16); VII(c),(4)).

4. Low pulse pressure (VII(4); Table II(2); XIII(b),(e)).

5. Physical, X-ray and electrocardiographic evidence of hypertrophy of the left ventricle (I(1),(2),(3); VI(b),(1); Fig. I; VII(b); XIV(c); XV(4)).

6. Suggestive evidence, such as

a. Decreased intensity of the mitral first sound (III(12)).

b. Signs of aortic regurgitation (XIX).

c. Signs of mitral stenosis (XVIII).

XXI. *Pulmonic regurgitation* (Fig. III) is rare; when present it is usually functional, sometimes congenital, rarely rheumatic. When functional it is secondary to the dilatation of the pulmonary artery which accompanies extreme mitral stenosis (Graham Steele, II(f)) and, rarely, extreme obstructing lesions in the lung.

The diagnostic criteria are usually inadequate. Suggestive signs are:

1. A diastolic murmur (II(b),(2),(3); Table I(7); VIII(2)).

2. A normal pulse pressure (XIII(b)).

3. Cyanosis (VIII(c); X(c)).

4. Physical, X-ray and electrocardiographic evidence of hypertrophy of the right ventricle (I(1),(2),(3); VI(a),(2); Fig. I; VIII(b); XIV(b); XV(3)).

5. Signs of mitral stenosis of high degree (XVIII).

6. Marked emphysema.

7. Signs of left heart failure.

XXII. *Pulmonic Stenosis* (Figs. II and III) is almost always congenital, rarely rheumatic or arteriosclerotic. In either case it rarely occurs as the only lesion.

The diagnostic criteria are:

1. A systolic murmur (II(a),(1),(3); Table I(8); VII(1),(2)).

2. A systolic thrill (V(2)).

3. Marked diminution or absence of the pulmonic second sound (III(15),(16); VII(c),(4)).

4. Normal pulse pressure (XIII(b)).

5. Physical, X-ray and electrocardiographic evidence of hypertrophy of the right ventricle (I(1),(2),(3); VI(b),(2); Fig. I; VII(b); XIV(b); XV(3)).

6. Cyanosis (VII(e); IX(1); X(c)).

7. Suggestive evidence, such as

a. Diminished tricuspid first sound (III(13)).

b. Signs of other congenital anomalies (IX).

c. Clubbed fingers (IX(2)).

XXIII. *Tricuspid regurgitation* (Fig. III) from organic cause is rare, though a transient or permanent functional leak following moderate or extreme dilatation of the right ventricle (II(f)) is believed to occur commonly.

The diagnostic criteria are usually inadequate. Suggestive signs are:

1. A systolic murmur (II(b),(1); Table I(5); VIII(1)).

2. A systolic thrill (V(5); Table I(5)).

3. Cyanosis (VIII(c); X(c)).

4. Physical, X-ray and electrocardiographic evidence of hypertrophy of the right auricle (I(1),(2),(3); VI(a); Fig. I; VIII(b); XIV(a); XV(1)).

5. Physical, X-ray and electrocardiographic evidence of hypertrophy of the right ventricle. (I(1),(2),(3); VI(a),(2); Fig. I; VIII(b); XIV(b); XV(3)).

6. Marked peripheral congestion with pulsations of the liver in extreme cases (VIII(c); X(c); Fig. III; XVI(1)).

7. Signs of rheumatic, mitral or pulmonic lesions (XVII; XVIII; XXI; XXIX).

XXIV. *Tricuspid stenosis* (Fig. III) is rare, when present it is usually rheumatic.

The diagnostic criteria are often inadequate. Suggestive signs are:

1. A diastolic murmur (II(a),(2); Table I(6); VII(1),(3)).

2. A diastolic thrill (V(2); Table I(6)).

3. Accentuation of the tricuspid first sound (III(2),(6); VII(5)).

4. Cyanosis (VII(e); X(c)).

5. A pulsating liver. (This sign is characteristic of tricuspid lesions.) (VII(e); Fig. III; X(c)).

6. Throbbing congested peripheral veins. (VII(e); Fig. III; X(c)).

7. Physical, X-ray and electrocardiographic evidence of hypertrophy of the right auricle. (I(1),(2),(3); VI(b); Fig. I; VII(b); XIV (a); XV(1)).

8. Signs of rheumatic, mitral and aortic lesions. (XVII—XX incl.)

XXV. *Hypertensive Heart Disease* (Fig. III) occurs with arteriosclerosis, chronic nephritis and idiopathically (Hyperpiesis) (XXVIII(3)). Many arteriosclerotics and chronic nephritics, however, do not have hypertension.

The diagnostic criteria are:

1. Accentuation of the aortic second sound (III(9)).

2. High blood pressure readings (XIII(e); Table II(3)).

3. Physical, X-ray and electrocardiographic evidence of hypertrophy of the left ventricle (I(1),(2),(3); VI(c),(1); Fig. I; XIV(c); XV(4)).

4. Physical, and X-ray evidence of enlargement and tortuosity of the aorta (I(3); XI (5); XV(6)).

5. Suggestive evidence, such as:

a. Accentuation of the mitral first sound (III(8)).

b. Electrocardiographic evidence of heart block.

c. A soft systolic murmur at the aortic area (II(c),(f); XI(6)).

d. Thickened peripheral arteries.

XXVI. *Thyroid Heart Disease* is a sequel to the thyrotoxicosis of either exophthalmic goitre or the so-called toxic adenoma.

In addition to the "eye signs," diffuse or adenomatous enlargement of the thyroid, increased basal metabolic rate, and the familiar symptomatology, the diagnostic criteria are:

1. Accentuation of the first sound at the apex (III(5)).

2. Tachycardia at rest.

3. A systolic murmur most intense at the pulmonic area (II(4),(5),(6)).

4. A systolic thrill at the pulmonic area (V(6)).

5. A heaving forceful impulse (VI(1)).

6. Physical and X-ray signs of enlargement of the left ventricle (I(1),(2),(3); VI(f),(1); Fig. I; XV(4)).

7. A high pulse pressure frequently (XIII (e); Table II(4)).

8. Hypertension frequently (Table II(4)).

9. Enlargement of the T-wave in Lead II of the electrocardiogram.

XXVII. *Congenital Lesions* (IX; XXIX (4)).

Interventricular septal defects (Fig. II) occur in varying degree. Through them the higher tension developed in left ventricular contraction is transmitted as a burden to the right ventricle.

The diagnostic criteria are:

1. A prolonged murmur and thrill beginning in systole and lasting into diastole (II (e); Table I(9); V(4)).

2. Obliteration of the second sound in the third and fourth left interspaces.

3. Physical, X-ray and electrocardiographic evidence of hypertrophy of the right ventricle (I(1),(2),(3); VI(g),(2); Fig. I; XIV(b); XV(3)).

A Patent Ductus Arteriosus (Fig. II) (IX (6)) forms a variably free communication between the aorta and the left pulmonary artery through which the high tension of the left ventricular systolic discharge into the aorta is transmitted, in part, to the pulmonary circuit.

The diagnostic criteria are:

1. A to and fro "machinery" murmur (II (e); Table I(10)).

2. A systolic and diastolic thrill (V(4)).

3. Accentuation of the pulmonic second sound (III(10)).

4. Physical, X-ray and electrocardiographic evidence of right ventricular hypertrophy (I(1),(2),(3); VI(g),(2); Fig. I; XIV(b); XV(3)).

5. Physical and X-ray evidence of dilatation of the pulmonary artery (I(3); XI(5); XV(5)).

6. Clubbed fingers (IX(2)).

Patent Foramen Ovale (Fig. II). (An interauricular septal defect) of slight degree is a frequent unforeseen finding at autopsy. Although cyanosis, clubbing of the fingers, systolic and diastolic murmurs may be present, there are no reliable diagnostic criteria.

Pulmonic stenosis (Fig. III) previously discussed.

The other rarer congenital lesions are of little interest.

XXVIII. *Aneurysm* (XI; Fig. III).

In addition to the symptoms previously mentioned the diagnostic criteria are:

1. A systolic murmur (II(c),(1),(3); XI (4)).

2. A systolic thrill (V(3)).

3. Accentuation of the aortic second sound (III(9),(11); XI(3)).

4. A diastolic shock (IV; XI(3)).
5. Pressure signs (XI(2); XII(b)).
6. Unequal pulses (XI(a)).
7. Unequal blood pressure on the two sides (XIII(a); XI(a)).
8. Physical and X-ray evidence of an enlarged expansile aorta (I(1),(2),(3); XI(1); XV(6)).
9. Suggestive evidence, such as:
a. Aortic regurgitation (XIX).
b. Syphilitic stigmata elsewhere.

XXIX. *Combined Lesions:*

Were it not for the too common tendency for heart lesions to be multiple, the diagnosis and prognosis of the various disorders would be much simpler. It is obvious that a logical grouping of the hypertrophies, accentuations or suppressions of sounds, impulses, effects upon adjacent structures, murmurs, thrills, blood pressure readings, X-ray and electrocardiographic criteria which are characteristic of one lesion would be made with much greater difficulty if a comparable group of phenomena, characteristic of another lesion, were superimposed.

Unfortunately the *rheumatic process*[1] commonly involves two or more valves and typically produces a stenosis and regurgitation of each of the valves involved, especially is this true of the mitral valve. *Syphilis*[2] frequently causes both aortic regurgitation and aneurysm. *Hypertension*,[3] usually with arteriosclerosis, is often added to a rheumatic or luetic lesion. *Congenital defects*[4] are typically multiple and are particularly prone, as are rheumatic lesions, to superimposed *acute or subacute bacterial infection*. *Goitre Heart* alone seems to be content with a single syndrome.

Comment: It is hoped that a careful consideration of the above diagrams, tables, and text will help the reader in his future tasks of assembling and interpreting those manifestations of heart disease herein considered.

It is further hoped that the mechanism by which these manifestations are produced is sufficiently well illustrated to permit the diagnosis of, at least, the commoner lesions by a process of deductive reasoning rather than from memory.

BIBLIOGRAPHY

1. White, Paul D.: Chronic Valvular Disease, Cecil's Textbook of Medicine, 1031-49, Philadelphia and London. W. B. Saunders Co., 1927.
2. Norris, G. W., and Landis, H. R. M.: Diseases of the Chest and the Principles of Physical Diagnosis. Philadelphia and London. W. B. Saunders Co., 1927.
3. Emerson, C. P.: Physical Diagnosis. Philadelphia and London. J. P. Lippincott Company, 1928.
4. Wiggers, C. J.: Circulation in Health and Disease. Philadelphia and New York. Lea and Febiger, 1923.
5. Reid, W. D.: The Production of Heart Murmurs. *Am. J. Med. Sc.*, 165, 328-40, 1923.
6. Cabot, R. C.: Physical Diagnosis. New York. William Wood and Company, 1922.

AN ANALYSIS OF THE LITERATURE ON ACUTE INFECTIOUS MONONUCLEOSIS.

By HAROLD W. POTTER, M. D., Newport News, Va.

This condition which is becoming more common, or at least is being recognized more often, is one about which most of the standard textbooks say little or nothing. This paper is an attempt to assemble the information gleaned from the many monographs on the subject, into a single article. I hope that it may save time for the busy practitioner who may be confronted with a case and seeks information concerning the literature.

HISTORICAL.—Pfeiffer in 1889 reported a condition with fever, moderate enlargement of the superficial glands, and occasionally the deep lymphoids. He called this condition acute glandular fever. It was Turck, however, in 1907, who first reported the mononucleosis in this disease. The name acute infectious mononucleosis was given this disease by Cabot, in 1907. He regarded the disease as a distinct clinical entity and, while there is much discussion upon this subject in the monographs reviewed, the concensus of opinion is in favor of Cabot's view.

DEFINITION.—In 1920 Sprunt and Evans of Johns Hopkins defined the disease as follows: An acute febrile disease without local manifestations, except the lymphocytosis and slight enlargement of the spleen and glands, with recovery.

This definition is not entirely satisfactory. I believe that the word "infectious" should be included in the definition and that some mention should be made of the abnormal cells which are found and which, in the light of present haematological study, are diagnostic in import. The disease is an acute infectious, febrile disease, characterized by slight enlargement of the spleen and glands and the presence of a lymphocytosis, the predominating cell of which is abnormal.

ETIOLOGY.—The etiology is not known. Pfeiffer has claimed to have isolated the bacillus of influenza from the glands and blood of patients suffering from the disease. Lubinski was of the opinion that a streptococcus gained entrance through the respiratory tract and that it is the etiological factor. This he believed because of the appearance of a rash and sore throat in many cases. Coon found in 1922 a diphtheroid organism which he believed the cause. Vincent's organisms have been found in many cases but Baldridge *et al.* aptly state that the frequent appearance of these organisms only further proves that Vincent's, like pyogenic cocci and diphtheroids, are often present in the normal mouth and throat of these patients, without of necessity being etiologically associated with the disease in question.

It will be seen from these conflicting opinions that the explanation of the etiology of this condition, like that of all diseases presenting abnormal blood pictures, is most unsatisfactory.

SYNONYMS.—The disease has been called acute benign lymphoblastosis, acute lymphadenosis, acute leukemia with recovery, and acute glandular fever.

EPIDEMIOLOGY.—Epidemics of this diseases are usually house epidemics although there are reports of not a few fairly large general epidemics. There have been epidemics in England, Germany, Russia, and the United States. West reports 100 cases in New York, Baldridge *et al.* report an epidemic of thirty-two cases in Iowa. R. R. Spencer, of the U. S. Public Health Service, has reported an epidemic in Rocky Mount, N. C., in 1926. Twenty-six cases were noted. Studies made of the water supply, milk, and ice cream supply, and possible insect vectors throw no light on the mode of transmission. The mode of infection, it would seem, from the character of the epidemics described is a droplet infection from the upper respiratory tract.

SYMPTOMATOLOGY.—The disease is common in children. Most of the cases reported have been in patients between the ages of eight and eighteen. More cases have been recorded in males than in females. The youngest case reported was La Motte's whose patient was five years of age. A case which was under my own observation was forty-seven years of age.

The symptom-complex presented by this disease is not a constant one. The onset in practically all of the cases reported was characterized by malaise and pharyngitis. The lymphoid follicles of the pharynx show hyperplasia and are translucent in appearance. Fever is rather a constant symptom in the reports studied. It ranges from 101 to 104, and chills may intervene.

Baldridge *et al.* report sore throat in 68 per cent of their fifty-six cases. La Motte reports two cases, one of which was age five years. This is the youngest case reported. Both cases had sore throat. Butka reports five cases, all exhibiting pharyngitis, and my case, observed in Paris, had an extremely red and angry throat. Longcope and Cotrell report it as a constant finding in most cases.

Enlargement of the spleen was observed by practically all of the writers as a symptom in this condition.

The adenopathy, which is a symptom always seen, varies in extent and in the glands involved. It may involve only the cervical chain. It may, however, and frequently does involve the axillary, epitrochlears, and inguinal chains. For the most part the glands are only moderately enlarged. This adenopathy may persist for many weeks.

There are two other symptoms observed often enough to warrant mention, namely, a skin eruption and abdominal pain. W. T. Longcope, in reporting ten cases, describes, in two cases, a skin rash which exhibited itself as pinkish papules and macules resembling rose spots. There was no itching noted. Baldridge *et al.* describe a faint flush occurring in some of their series, which did not have the typical appearence of a scarlatinal rash.

Abdominal pain is reported by several authors. Longcope reports it in two cases of his series. Steinfeld and Goldberg report abdominal pain in one case of six reported. Montgomery reports it in one case which also exhibited a sore throat. Jager reports two cases with abdominal pain. McKinley reports one case of nine with this symptom.

The presence of the organisms of Vincent's angina in the mouths and throats of patients with infectious mononucleosis is also worthy of note. James Cotrell reports six cases in seven that had positive smears for Vincent's. McKinley reports four of nine cases with positive smears and Longcope three in ten. Bloedin and Houghton report positive smears in three of four cases studied. As has been noted above, these findings probably merely

XUM

illustrate that Vincents' organisms are frequently present in any condition in which a severe pharyngitis is seen, and are of no etiological import.

V. R. Mason has reported two cases in which jaundice was a marked symptom. A. J. Joynt reports two cases coexisting with mastoiditis. Both recovered. Poynton and Moncrieff report, in two cases which terminated fatally, the presence of pains in the knee, ankle, hip, wrist, and finger joints with rarefaction of these areas demonstrable by roentgenograms. These two cases also had numerous nodules in the scalp.

The most important symptom and one which is of great aid in diagnosis is the lymphocytosis and this will be considered under the heading of the study of the blood picture.

Blood Picture.—Anemia seldom if ever accompanies this condition. The red count and hemoglobin remain normal during the course of the disease. The abnormality of the blood picture is seen in a study of the white cells.

A leukocytosis appears with increase in total count ranging between 12,000 and 30,000. The increase is gradual as a rule and the return to normal is also gradual. The return to normal takes several months as a rule.

Baldridge *et al.* report fifty-six cases with the highest count at 26,950, and the lowest at 3,400. Poynton and Moncrieff, of England, report a count of 62,000, and my own case reached 60,000. For the most part, however, the counts ranged from 12,000 to 15,000 in the cases reviewed. The most striking feature of the disease is the lymphocytosis.

Cotrell states that the increase in lymphocytes in this condition consistently reached 40 per cent or more of the total leukocytes. The lymphocytic increase and the granular elements decrease.

An examination of the lymphocytes is of interest. Some men report that the preponderance is of small lymphocytes, others large. Poynton and Moncrieff report cases where the large cells were 83 per cent and the small 3 per cent. In the case I observed the small type were in greater number. Base and Hermann likewise found the small cells to be the more numerous.

An abnormal cell is found constantly in these cases which should make the diagnosis less difficult. Before discussing these abnormal cells, it should be said that the normal lymphocytes show no immaturity and stain regularly. Base and Hermann claim the presence of many mesolymphocytes of Pappenheim.

A detailed description is given here of the abnormal cell found in the blood stream, and in the glands because of its diagnostic importance. This cell varies in size from small to large. The nucleus has a wavy appearance due to chromatin strands. Nuclei have been reported, but are certainly not common. The nucleus may be egg or horse-shoe shaped, or it may be made up of lobules. Stem cells have been described by Downing, but do not seem to have attracted other investigators. Downey and McKinley state that these cells are not immature lymphoblasts but differentiated lymphocytes. John McLean has shown that with supravital staining there was a rosette of neutral red granules in the indentation of the nucleus.

The cytoplasm of these cells is larger than that of normal lymphocytes and takes a basophilic stain or has the appearance of hyaline. The cytoplasm has no definite granules. These cells do not give the oxydase reaction. These abnormal cells comprise about 30 per cent of the total white cells, and begin to disappear with convalescence.

Pathology.—The general pathology of this condition is described by Poynton and Moncrieff in a report on two fatal cases. The portal vessels were filled with small round mononuclear cells. These cells had poorly staining cytoplasm. The spleen and glands were sites of increase in fibrous tissue. There was hyperplasia of all cells with a predominance of endothelial cells. There was no evidence of any cells of malignant character. There were no multinucleated cells. The kidneys were the site of cloudy swelling.

Baldridge *et al.* describe the examination of axillary nodes from six cases. The glands averaged 3-6 cm. and were soft and spongy. There were cells found which had lobulated nuclei and resembled the abnormal cells found in the circulation as described under the Blood Picture. These glands gave these writers the impression that they were similar to glands found in the malignant lymphomas. Small lymphoid cells were not noted by these investigators. Supravital staining proved the cells to be lymphoid in origin.

Diagnosis.—The diagnosis depends on the blood picture in the main. The glandular enlargement, either localized or general, when accompanied by the proper blood picture,

makes the diagnosis fairly easy. It appears, however, that a diagnosis is not complete without the presence in the blood picture of the abnormal cells described above, namely, a cell with a large cytoplasm taking a basophilic stain, or having a hyaline appearance with no granules in the cytoplasm. A lobulated nucleus is found having neutral red granules in the indentations, and the cell is negative to the oxydase reaction.

The presence of sore throat, abdominal pain, and high temperature are supplemental factors in the diagnosis.

Differential Diagnosis.—The following must be differentiated:—

Acute Lymphatic Leukemia:
1. By the high count in most cases.
2. By the cell morphology as described above.

Agranulocytic Angina:
1. By the ulcerative angina.
2. Extreme leukopenia in this condition.
3. Cell morphology.

Mumps:
1. By blood picture.

In cases with abdominal pain, appendicitis must be differentiated:
1. By blood picture.

In cases with rash, scarlet fever must be differentiated:
1. By blood picture.

Hodgkin's Disease:
1. By blood picture and cell morphology.
2. By the anemia and hard glands.

Dengue:
1. By the leukopenia.
2. By the bone break pains.

Vincent's Angina:
1. By the blood picture.

Prognosis.—The prognosis is excellent. Only one report among those reviewed reported death from this disease.

Poynton and Moncrieff report two deaths. The usual course is several weeks to three months and ends in recovery.

Treatment.—The treatment in the main is symptomatic. Many specific treatments have been tried, but little benefit resulted. Neoarsphenamine has been used, and Longcope reports recovery in one case some years ago. This case would probably have recovered without this therapy. Non-specific protein therapy has been tried to raise the glandular elements but little success has met the attempts. Until more is learned of the etiology no specific treatment can be described. Prevention of the condition, especially in epidemics, seems difficult. Most writers believe that isolation is not practicable until the method of contagion is determined. The status of treatment, then, at present, seems to be to treat the symptoms as they arise.

This condition has one virtue that most of the diseases affecting the hemopoietic centers do not have, namely, most of the patients get well notwithstanding the lack of knowledge of the etiological factor.

Summary

1. Infectious mononucleosis is an acute, febrile, infectious disease, characterized by lymphadenitis, splenomegaly, and the appearance of abnormal lymphocytes in the circulation and usually terminating in spontaneous recovery.

2. The etiological factor is unknown, but a study of the reports of epidemics leads me to believe that it spreads by droplet infection, and probably is bacterial in origin.

3. The mode of onset differs, but once the disease is established, diagnosis by means of cell morphology should not be difficult.

4. The literature seems to produce evidence that infectious mononucleosis and acute glandular fever are identical.

5. This disease occurs more commonly than we realize. Failure to have routine blood examinations done is responsible for the failures in diagnosis.

6. This disease is not confined to childhood, but may occur at any age.

7. No specific therapy is known.

Bibliography

Bass, M. H.: Monograph, Infectious Mononucleosis in Childhood.

Cotrell: *Amer. Jour. Med. Sc.*, April, 1927, No. 4. Vol. clxxiii, p. 472.

Baldridge, C. W., *et al.*: *Arch Int. Med.*, October, 1926, Vol. 38, pp. 413-448.

Jager: *Kans. Med. Jour.*, January, 1927, pp. 15-18.

La Motte, Wm.: *Arch Otolaryngology*, August, 1929, Vol. 10, pp. 171-176.

Joynt, A. J.: *Jour. Iowa State Med. Soc.*, October, 1928, Vol. 18, pp. 393-396.

Butka, H. E.: *Cal. and Western Med. Jour.*, September, 1926, pp. 353-355.

Fox, H.: *Amer. Jour. Med. Sc.*, April, 1927, No. 4, Vol. clxxiii, p. 486.

Spencer, R. R.: *Pub. Health Rep.*, Vol. 41, October 8, 1926.

Montgomery: *Canadian Med. Jour.*, February, 1930, Vol. 22, pp. 235-236.

McLean, J. A.: *Med. Jour. Australia*, November 23, 1929, Vol. 2, pp. 734-740.

Potter, H. W.: *Va. Med. Monthly*, January, 1930, Vol. 56, pp. 682-683.

Mason, V. R.: *Calif. Med. Jour.*, September, 1928, Vol. 29, pp. 187-8.
Sacks, Adolph: *Neb. Med. Jour.*, March, 1928, Vol. xiii, No. 3, pp. 81-85.
Steinfield E., and Goldberger S., *Med. Jour. and Rec.*, May 19, 1926, pp. 639-640.
Richards: *Minn. Med. Jour.*, July, 1927, pp. 434-439.
Wylie, R. M.: *West Va. Med. Jour.*, March, 1927, pp. 128-132.
Poynton, F. J., and Moncreiff, A.: *The Lancet*, October 19, 1929, pp. 812-814.
Haywood, H.: *Jour. South. Med. and Surg.*, Vol. 89, No. 1, pp. 16-18.

70 *Thirty-Third Street.*

EMERGENCY CYSTOSCOPY FOR RELIEF OF URETERAL COLIC.

By THOMAS V. WILLIAMSON, M. D., Norfolk, Va.
Staff Urologist to St. Vincent's and Protestant Hospitals.

Ureteral peristalsis is an uncommonly competent part of the urinary mechanism, if we judge by its self-reliance and hardiness. Indeed it seems to be self-sufficient. The stimulus that brings it about is thought, by some observers, to be myogenic, and thus originating within the musculature of the ureter itself, is deemed to be independent of other nerve centers. It is definitely known that transverse lesions of the cord may not interfere with it. Most of us have seen patients in whom there was incontinence of both urine and feces, but in whom there was no appreciable cessation of the peristaltic portage of urine down to the bladder.

This muscular pump is quite capable of adjusting itself to meet all normal demands; so the rate of its waves varies with the amount of work to be done. It idles along, when the occasion permits, and pushes lazy jets of urine into the bladder every thirty seconds or so. But, when more active duty is the order of the day, it answers the call. The spurts quicken their tempo and, at the same time, take on added force and amplitude. When the kidneys are carrying a heavy burden of elimination, we may observe copious whirls being projected at a fourteen second rate. The point is this, unless there is some serious departure from the normal, ureteral peristalsis does not fail the kidneys.

Now suppose a mischief-maker tumbles into this smoothly functioning, competent, self-sufficient mechanism. A calculus rolls out of the renal pelvis and engages in the ureter. What happens? The ureter at once attempts to rid itself of the offensive intruder and, for the time being, it does not cease striving to carry away the urine.

Intense, quickened, spasmodic peristaltic waves result. They may be broken sharply at the point of obstruction by the calculus. However, they are picked up, or begun again, below the break, and then continue their downward way.

But above the irritating obstruction there is a different story to tell. Equally powerful, spasmodic reverse peristalsis is set up, which naturally, since the urine cannot go downward by the stone, drives this imprisoned fluid upward into the kidney pelvis again. Wislocki and O'Conor feel that the increased intrapelvic pressure, thus suddenly induced, is responsible for much of the pain of ureteral colic.

The law of physics, which governs hydrostatics, rules that this pressure may go but so high and no higher. The expansive force of the urine within the pelvis will not become greater than that of the blood pressure behind the kidney, since this organ possesses no muscular system to aid the act of secretion, but depends upon blood pressure for the osmosis of elimination. This force, owing to the muscular ruggedness of the pelvis when it is in a normal state, cannot muster enough energy to produce a vast ballooning out of the pelvis in short order like that seen in a true hydronephrosis, yet withal it is capable of inciting atrociously acute pain. Fortunately for the renal economy, it seems that a pressure assault by the urine over a long period of time is needed to develop a real hydronephrosis. Nevertheless, even a moderate degree of intrapelvic pressure may engender excruciating agony.

The kidney is immensely concerned with the plight into which it has fallen. With uncanny adaptability it sets in motion an amazing process which has no analogue in human physiology; pyelovenous back-flow takes place. The pent up urine in the kidney pelvis enters the veins in the terminal sulci of the calices and drifts back into the blood stream. This back-flow is evidently intended by nature to relieve much of the pressure distress. It is interesting to note in this connection that Hinman found that dyes, introduced into a true hydronephrotic sac, would not remain there long. Owing to this reverse flow of urine, he concludes that there may not be rank stagnation or stasis of the contents of the blocked-off pelvis in such conditions.

Thus it is, even in those cases in which there is total occlusion of the ureter, that the func-

tion of the kidney, while it may be excessively embarrassed for the time being, may not be absolutely stopped. To relax tension even more, peristalsis may cease. If the delay in removing the obstruction is not unduly protracted, the kidney, never having been entirely idle or defunct, will resume its full function, and peristalsis will begin again when the stone is passed or taken out. For this reason radical kidney surgery should never be considered in cases of ureteral calculi until the organ has had ample time to show that it cannot resume its function in a competent manner.

When we recall the wide range in the sizes and shapes of the calculi that we have seen, we realize at once that there must also be a big variation in the degree of the actual obstruction to the flow of urine through the ureter occasioned by an individual concretion. We have but to remember the pain that our patients have suffered at times in passing comparatively small calculi to know that back pressure is not the sole cause of the distress in ureteral colic. Some of these stones were so small that they could not have been responsible for much back pressure, if indeed there was any at all. Therefore trauma must be, and is, a second contributing factor in this calcareous castigation of the sensory nerves in the upper urinary tract.

For our present purpose, however, we are more vitally concerned with the ureteral calculi that are of sufficient size to engage in a narrow part of the ureter and, by so doing, be temporarily a great disability to the kidney and its tributary ureter in the matter of drainage.

There are several anatomical points of narrowing in all normal ureters. A calculus large enough to be stopped in its downward course meets one of these contracted points and impinges there. Frenzied peristalsis grinds its rough, or sharp, or rosetted borders into the delicate mucosa. Hemorrhage may result; pain of the worst type imaginable blasts the patient into groveling supplication for relief, and certainly there is an immediate edema of the contiguous and adjacent mucous membrane. This edema is a protective process on the part of nature, but, in this instance, it further complicates the difficulty of the patient by closing in the calibre of the ureter about the stone, and thus more tightly jams the tube.

The ureter is intransiently antagonistic to trauma, and the edematous reaction within the ureter at times seems to be disproportionate to the amount of injury done. What tortures have not humans suffered on account of the efforts of edema to combat trauma! The writer has had occasion to re-cystoscope patients shortly after they had experienced a strenuous dilatation of a narrowed ureteral orifice. A collar of bullous-like edema adorned the outlets and circled the small openings so tightly that the ureters, perforce, were laboring with mighty peristaltic heaves to overcome the grape-like hazards. These edematous rings unquestionably created back pressure of a painful type. The visual pathology was altogether too gross to believe otherwise. The writer unhesitatingly expresses himself to be of the opinion that such intra-ureteral swellings, following large calibre dilatations, are responsible for most of the unpleasant after-effects observed in this field of urologic endeavor.

Called to see a patient for the first time, with a newly acquired renal colic, the physician usually does the two things that have for so long constituted the recognized method of treatment; he injects an opiate to relieve pain, and instructs the patient to ingest large quantities of fluids so that the increased urinary output may serve to expedite the downward progress of the foreign body within the ureter. This form of treatment is certainly the one of choice when the stone is so small that it cannot block the ureter and produce sudden back pressure. But, *is it* the right thing to do with an arrested calculus, or with one that is of sufficient proportion to incite the reverse peristalsis that results in concomitant intrapelvic pressure? Is it wise to order the ingestion of fluids that will certainly intensify peristalsis and heighten back pressure? The writer thinks that this is not the right thing to do. Who knows at the outset of ureteral colic what may be the dimensions of the stone that is causing the trouble?

Then what is the right thing to do? Charles Mayo says, "Several years ago the surgeons removed the majority of ureteral stones surgically by the open method; now the urologist removes the majority of them." Since it is so clearly evident that the urologist is supplanting the surgeon in this field and, since he succeeds in extracting the majority of such formations without resort to open operation,

XUM

there is no object now in delaying urological intervention in order that expectant therapeutics may be tried out. Delay has been in keeping with good medicine heretofore to save cutting operations. But that day is done, as Mayo has told, and it is the proper time to inaugurate a new order of case management.

From the standpoint of the urologist, it is not beneficial to either the kidney or to the ureter to keep hands off while these two structures are in this precarious predicament. Should we do so, on the one hand we leave the kidney to re-adjust its entire functional life in a very short time, while on the other hand, we permit the ureter to struggle madly to expel the object that so viciously threatens its present and future well-being.

In the light shed by the physiological and pathological facts set forth in the early paragraphs of this article, we see that these cases are definite emergencies. Drainage of the affected kidney by means of the ureteral catheter should be instituted as quickly as may be. Should this be done, the impediment of back pressure is nicely eliminated from the complex, and then the urologist has to deal only with the ureteral phase of his problem.

Unaided by intra-ureteral manipulation, there is no logical reason to expect the passage of an arrested calculus until there has been both a conciliatory subsidence of edema about the site of arrestment and an adjustment of the ureteral calibre to the diameter of the encumbrance. Edema diminishes the lumen greatly. A shift in the position of the stone, which brings its long axis into line with that of the ureter, must take place, or else the ureter must dilate sufficiently to let it pass. This period of re-adjustment, granting that it is to take place, may be a stormy time for the patient and a disastrous wait for the kidney and the ureter.

An infection may intervene in and around the kidney pelvis which, as we know, may run the gamut of severity from that of a simple pyelitis to that of total destruction of the organ. Scar tissue is quite likely to follow a cut in the ureteral wall that gives rise to hemorrhage. Hemorrhage in some of these cases is rather severe and attests to an abrasion within the ureteral musculature that must be regarded as more than a mere trifle. Pressure necrosis is prone to occur where a stone impinges tightly upon the ureteral wall. To counteract this tissue destruction and to preserve its integrity, the ureter builds a protecting wall of fibrous tissue in advance of the ulceration. This process may be so extensive that partial encapsulation of the stone may result. Could a stricture of the ureter possibly have a better foundation upon which to build?

The methods by which the urologist is supplanting the surgeon are simple. They consist of the dilatation of narrow places in the ureter, the changing of the axis of the calculus, and the devising of some type of down-pull upon the stone. Dilatation is very frequently done by means of one or more ureteral catheters. A change in the position of an elongated or irregular stone may re-establish drainage. Such change may be accomplished by the introduction of an ureteral catheter. Since immediate drainage may be had through the ureteral catheter, provided it can be pushed by the stone, and since drainage is the imperative desideratum in all cases, the suggestion is here made that the urologist be intrusted with the emergency care of the patient as soon as it is definitely known that there is a serious renal or ureteral colic. The following case histories are selected from a series of like nature and sketched briefly to show that the suggestion is both timely and appropriate.

Case 1.—A white woman of thirty years had been conscious of an uneasy feeling in the right kidney region for several months. At times the symptom was sharp and aching in character. On one occasion, she had noticed a tinge of blood in the urine for several voidings.

At eight o'clock in the evening she was seized with a violent attack of kidney colic. Prostration was profound, and the pain was so acute that three hypodermic injections of one-third of a grain of pantopon at short intervals failed to control it. Having had all of the opium that was advisable, and light anesthesia being contraindicated in the presence of a slight heart lesion, the patient was removed to the hospital at midnight.

Cystoscopy was done at once and a No. 6 F. ureteral catheter was introduced into the right renal pelvis. Resistance was met at the iliac crest but the catheter succeeded in detouring this point without great difficulty.

Immediately after the eye of the catheter had passed this point of resistance there was a continuous flow of urine through the tube. There was no peristaltic wave at the beginning of drainage. This showed that the urine in the pelvis was under considerable pressure. The

pain quieted quickly as the intrapelvic pressure was reduced and the paroxysms of colic soon passed away. As long as the catheter remained in place there was some discomfort, which, however, was not of the nature or intensity of colic. When the catheter had drained without intermission for several moments, a return of normal peristalsis was noted.

The catheter was left in place. An X-ray plate, taken the following morning, revealed a rounded shadow lying on a plane with the catheter at the crest of the ilium.

At the expiration of fifty-two hours a second catheter, larger than the No. 6 already in the ureter, was pushed by the stone. Thinking that this two-catheter dilatation might be sufficient to permit the stone to deliver itself, both of them were withdrawn. A few hours later it came down into the bladder and was ejected without trouble at the next urination.

From the time that the first catheter entered the renal pelvis until the passage of the stone, there was no more colic and, what is more important still, there was no further interruption to the normal peristaltic rhythm.

Case 2.—An obese white man in the late thirties was seen at home at ten A. M. A vicious attack of left renal colic had seized him without the warning of premonitory symptoms. He was removed to a hospital where the X-ray pointed out an elongated shadow of large size (orange seed) at the junction of the middle and lower thirds of the ureter.

Cystoscopy was done without delay and the tips of two No. 6 F. catheters were manipulated by the stone—one of them going up as high as the renal pelvis. A continuous jet of urine emerged from the catheters for a short time, and then rhythmic peristalsis reinstituted itself. As the pressure decreased the pain faded away.

The catheters were left in place until the following morning. They were then removed as the patient insisted upon going home, even though the stone was undelivered.

At eleven o'clock that night the patient phoned and requested a meeting at the office. The colic had returned. Upon meeting him there he himself urged cystoscopy, because he had been given so much relief by that procedure before.

When the ureter was brought into view, a decided bulge was noted in the intra-mural portion just above the orifice. A corkscrew, steel extractor was spiralled by this tumefaction. A moderate down-pull upon the instrument succeeded in delivering the stone into the bladder. However, the force that was required to extract the calculus was great enough to show unmistakably that ureteral peristalsis, combined with urinary pressure, would have been hard driven to propel the obstacle through the narrow lower ureter. Certainly some hours or days of ureteral labor would have been needed to accomplish this end.

Case 3.—The twenty-eight-year-old wife of a lighthouse keeper came into the office in a state of intermittent left renal colic. She had been having sharp, darting pains in the kidney region for several days, but the real onset of the colic had been ten or twelve hours prior to her visit.

X-ray was negative. The urine was decidedly bloody. There was some tenderness over the kidney. The temperature and the surgical blood picture were normal.

Bloody urine could be seen emerging from the left ureteral orifice. The mechanism of peristalsis seemed to be at fault. The waves did not appear to be delivering the normal quantity of fluid, and the efflux into the bladder was drawn out and sluggish. The impression one gained was that there was some obstruction to the down-flow somewhere up in the ureter.

A point of resistance was felt well up toward the kidney, which a No. 6 F. catheter passed with a quick jump, as though the obstruction had suddenly given way before it. This catheter was immediately withdrawn in order that it might be replaced by one of larger calibre. As the tip of the catheter emerged into the bladder, it was followed by a big jet of dirty, turbid fluid which required several seconds to be completed. When the flow had subsided enough to see clearly, the base of the bladder around the orifice was covered with kidney sand.

A No. 9 F. catheter was then introduced up to the pelvis with no great difficulty. There seemed to be no urinary back pressure per catheter, and the colic was now in abeyance. Therefore, the patient was sent home to be further observed.

One hour afterwards she was seized with a sharp attack of colic, which lasted about five minutes and then completely subsided. Following this spasm there was an urgent desire

XUM

to void. In the act of micturition, a foreign body was forced through the urethra into the urinal. This proved to be a roughly cylindrical mass of calcareous matter nearly one-half inch in length and one-eighth of an inch in diameter. It was very poorly organized, being quite porous, and looked like hardened sea-foam. Upon drying it crumbled easily.

Following the passage of this phosphatic deposit, the patient had an uneventful recovery. There has been no recurrence to date.

This is the train of events that probably led up to and caused the colic and hematuria. The seam-foam mass became disengaged from the kidney and was arrested in the narrow part of the ureter immediately below the pelvis. Upon this was deposited the kidney sand which filled in the interstices of the major mass so compactly that the urinary flow was very seriously impeded. The ureteral catheters broke the jam and cleared the way for the descent of the whole.

Case 4.—A white woman of thirty-five had been troubled with a stricture of the ureter in the region of the left ovary for four years. Occasional dilatation was called for to prevent pain in the kidney on that side.

The ureteral orifice itself was small and did not take kindly to dilatation. Any dilator above the graduation of No. 9 F. engaged tightly in the opening. Invariably this patient went through several stormy days following the treatments.

On one occasion the distress, which succeeded a No. 10 F. dilatation, was so pronounced that cystoscopic examination was repeated on the following day. The lady complained bitterly of tenesmus which, as she explained the symptom, was induced by irritation in the left side of the bladder. Renal colic intensified the discomfiture of the patient.

The cystoscope revealed a thick, heavy ring of bullous-like edema around the ureteral orifice. The entire area was elevated above the base of the bladder and had the appearance of an angry inflammation. The lips of the orifice were everted.

As this pathology seemed to be sufficient to constrict the ureter enough to cause back pressure, a small ureteral catheter was passed up to the kidney and the patient put to bed with the tube in-dwelling. The catheter did not lie with perfect ease in the tender, swollen ureter but the discomfort was quite mild when compared to the acute distress that had preceded its introduction; it was nicely controlled with opiates, whereas the colic had been openly recalcitrant to analgesic authority. The catheter was removed on the next day, and the patient noticed no return of the imperative symptoms.

At a subsquent treatment of the stricture, an in-dwelling catheter was inserted at the time of dilatation, and was kept in the ureter for thirty hours. A gratifying absence of annoying after-effects was the result.

Conclusions

1. Ureteral colic is a cystoscopic emergency.
2. The earliest possible relief of intra-pelvic pressure occasioned by sudden blocking of the ureter is imperative to the well-being of the kidney.
3. Continued trauma by a calculus to any part of the ureter is conducive to stricture formation and should be obviated without delay.
4. Edema of the ureter may cause colic. A small in-dwelling catheter may lessen the discomfort associated with drastic manipulation within the ureter.

Suite 818, Medical Arts Building.

THE NERVOUS, TIRED, AND RUN-DOWN PATIENT.

By J. BURTON GLENN, M. D., Washington, D. C.

The nervous, tired, and run-down patient is one of the most misunderstood in Medicine. Too often he is branded as neurotic and treated as such; too often given tonics and told to take a "rest cure" at some nearby resort. From Doctor to Doctor he goes, finally losing faith in the Medical Profession. Christian Science and Chiropractors ultimately draw a great number. The majority progress into definite organic disease and finally are recognized as having Tuberculosis, Cancer, Thyroid or what not. It is too infrequently realized that this group of symptoms usually is indicative of organic pathology somewhere in the body, and that the pathology can be found if a painstaking search is made. The average case is neglected usually through a lack of interest, seldom through a lack of knowledge or time.

A group of 120 cases presenting this group of symptoms has been analyzed and the results discussed in this paper. Exactly 55 per cent had been seen by other physicians and

34 out of the 55 had been branded as neurotics and sent away for a so-called "rest-cure." Fifty of the 55 had serious organic disease present, and had been given tonics and told that they were run-down. Only two had had the chest or gastrointestinal tract X-rayed. Only four had been given the benefit of a Wassermann test. Five had records of a metabolism test. These facts are given because they show how lightly these cases are regarded by the profession. They point to a lack of system in the handling and study of patients with this group of symptoms.

Anyone complaining of loss of weight, nervousness and being tired deserves a thorough and systematic study, and this study should, of course, include a good history. A Wassermann, blood study (including chemistry), urinalysis, and stool examination is a part of every complete examination. With the results from these investigations at hand, it can readily be determined if X-rays, spinal punctures, kidney function or other tests are indicated. They were found to be necessary in about 75 per cent of our cases before a conclusion could be reached. Patients are beginning to realize that they spend more time and money with several careless physicians than with one careful and painstaking doctor. With prolonged study and cooperation a diagnosis was made in 113 cases out of 120, and in but very few cases could a diagnosis be made on the first general survey. We believe that this group demands prolonged study in nearly every case.

A tabulation of the findings in 120 cases presenting symptoms of being tired, nervous, and run-down follows:

Early Thyroid Disease	20 cases or	16.5%
Chronic Appendicitis	20 cases or	16.6%
Early Tuberculosis	17 cases or	14.1%
Colitis	9 cases or	7.5%
Neurosis	7 cases or	5.8%
Anemia	7 cases or	5.8%
Encephalitis Lethargica	5 cases or	4.1%
Syphilis	5 cases or	4.1%
Unresolved Pneumonia	4 cases or	3.3%
Myxedema	4 cases or	3.3%
Infected Teeth	4 cases or	3.3%
Gall-Bladder Disease	3 cases or	2.5%
Gastric Ulcer	2 cases or	1.6%
Cerebral Arteriosclerosis	2 cases or	1.6%
Sinus Infection	2 cases or	1.6%
Uterine Fibroid	2 cases or	1.6%
Diabetes	1 case or	.8%
Chorea	1	
Chlorosis	1	
Menopause	1	
Carcinoma of the Bowel	1	
Chronic Myocarditis	1	
Post-influenzal Weakness	1	

The Early Thyroid Group. Of the twenty cases included in this group, nine were under twenty years of age. All were girls. These nine presented slight enlargement of the gland, loss of weight and fine tremor besides the tired feeling, etc., although the principal symptom was the latter. In every case was the menstrual cycle abnormal. With one exception they cleared with rest, Lugol's solution and luminal or bromides. The remainder of the group consisted of older women, with no definite enlargement of the gland, but loss of weight and nervousness. In two cases the patients were going through the menopause. These two were helped by ovarian extract. Two were sub-sternal enlargements and were cured by X-ray treatment. Four were operated on with good results. In every case three or more metabolism tests were done. We do not place much confidence in one alone. Eighteen of the group of twenty improved with either medical, surgical, or X-ray treatment as the case indicated.

The Chronic Appendix Group. The cases in this group numbered twenty or 16.6 per cent. The symptoms presented were nervousness, a tired feeling, occasional indigestion with gas and being run-down. In every case physical examination consistently showed definite tenderness over the appendiceal area. Every case was studied fluoroscopically. The criteria used in this study were the emptying time, visualization, and abnormality of position, size, and motility. The normal appendix is seen coming off from the inner and posterior portion of the cecum. It is freely movable, fills regularly and empties synchronously with the cecum and ascending colon. In order of importance the conclusions from X-ray study are: (1) Definite tenderness over the appendix with visualization; (2) failure of the appendix to empty; (3) abnormality of position, mobility, and size.

If the X-ray study is properly carried out, a high degree of accuracy is possible in the diagnosis. A diseased appendix was found in

every case operated on following this method. Thirteen of the cases were operated. Even in this small series, three gastric ulcers and two diseased gall-bladders were found associated with a chronic appendix. Either a right rectus or mid-line incision was done in every case. We belong to the group that believes that the small incision has but limited usefulness. We also believe that the reason symptoms persist after the removal of a chronic appendix is because pathology is left in the abdomen. When the abdomen is opened in any chronic case or condition, every possible organ should be examined and pathology corrected if found. By this method we obtained relief from symptoms in 90 per cent of cases of chronic appendicitis. Of the seven that refused operation three improved but four continued with the symptoms.

The Tuberculosis Group. This group numbered seventeen or 14.1 per cent. Eight of the seventeen cases were found to have early incipient tuberculosis. The most prominent symptom was that of being tired and a feeling of heaviness in the legs. Every case had lost from eight to twelve pounds, and in most cases there was loss of appetite. Five had been treated for indigestion and ulcer of the stomach. Loss of appetite with weakness has, in our experience, been two of the most constant symptoms in early pulmonary tuberculosis. These alone should focus attention on the lungs, but add to them loss of weight and afternoon temperature and the diagnosis is not so difficult. In over half of these early cases X-ray pointed out the pathology before the stethescope or other methods of examination. The average age incidence in these early cases was between thirty and forty. Of the remaining cases of this group, one had tuberculosis of the kidney and recovered following removal of the diseased organ. One had tuberculosis of the peritoneum which was arrected by exposure to the ultra-violet rays over a long period of time. The remainder were old fibroid cases that had apparently been quiescent but developed active symptoms several weeks before examination. The treatment of the incipient cases consisted of rest in bed until the temperature remained normal from three to four weeks. Mental encouragement and a moderate increase in the diet completed the treatment. Results were good in all but one case and she refused to go to bed.

The Colitis Group. This group consisted of nine cases. The average age-incidence was forty-four. Nervousness and being run-down were the outstanding symptoms. Only two had experienced abdominal pain. Two had previously noted mucus in the stools. One case had lost forty pounds and another twenty-two. Every possible diagnostic procedure was carried out to find either a cause for the colitis or disprove the diagnosis, but no other conclusion could be reached. Mucus was found in every instance, and in the majority, occult blood. X-ray, of course, showed a highly spastic colon but no other gastrointestinal pathology. Streptococcus viridans or hemolyticus was found in six cases; Bargen's Bacillus in two. Autogenous vaccines improved four of the six cases. Only two patients obtained relief from high colonic irrigations. It is very seldom that we now resort to this method of treatment over any length of time. In every case the soft bland diet of Dr. Barker was used. Castor oil in four minim doses four times per day proved very satisfactory. The best results were obtained from improvement of the mental outlook.

The Nervous Group. This group consisted of seven cases. Before making a diagnosis of neurosis every possible study was undertaken to find organic pathology. None could be found. Spinal puncture was resorted to in three cases with negative result. Five of the seven admitted that they were sexually incompatible with their mates, but the other two denied any unhappiness at home. In two cases talks with the husband improved conditions, but in the remainder it was impossible to help either side. It may have been that in this undiagnosed group early pathology was present but could not be demonstrated. It is possible, however, that mental factors accounted for all of the symptoms.

The Encephalitis Group. This group consisted of five cases. Headache was present in addition to the other symptoms. In each case symptoms had been present for about three or four weeks. Spinal puncture showed positive findings in every instance some time during the course of the disease. We believe that it is possible to have cases with negative spinal fluid findings at any one time during the acute stages, but that in order to make a positive diagnosis they must be positive on at least one examination. Every single case has an aftermath or residual at this writing. In one there

is disturbance of vision. In another, constant headaches and in still another intervals of depression and instability of emotions. In three of the five cases the only remission from headache and other symptoms is obtained by intravenous injection of 50 c.c. of a 50 per cent solution of glucose. In fact, outside of this study many of our cases have obtained relief from similar treatment. In our experience the serum has not proven of benefit.

The Anemic Group. This group is interesting because of the fact that it contains only seven cases. In only two cases could the cause of the anemia be found. In one case it was the teeth and in another carcinoma. These seven cases are the only ones out of 120 that could have possibly been helped by a tonic of iron, arsenic, strychnine, etc. And yet almost half of the cases studied in this resume had been placed on just such treatment, believing that they were anemic or needed tonics. It is almost conclusive evidence that every time we give a tonic we are avoiding a diagnosis. A thorough study of any case is worth more than all of the tonics in the Pharmacopœia.

The Unresolved Pneumonia Group. All four cases walked into the office. They complained only of being tired or wanting a tonic to aid in getting over a cold or grippe. Histories showed that these symptoms had been present for two weeks in most cases. One had been sick only five days. A grippe or coryza had preceded the onset in three cases. Following recovery they did not seem to regain strength as they should and thought it best to seek medical advice. Two had a dry hacking cough. Physical examination showed an area of consolidation at the right base in three and the left one. X-ray confirmed these findings. Treatment consisted of rest, expectorants and elimination. Termination was in an uneventful recovery in every case.

The Group With Syphilis. Of the five cases included in this group, three had cerebrospinal lues. It is noteworthy that in these three cases the outstanding symptoms were nervousness, irritability and a dragging feeling in the lower extremities. The neurological findings were varied and it is not in order to discuss them here; suffice it to say that one had paralysis of the facial nerve, and another weakness in the left arm. Of the remaining two, one had serological findings of tabes dorsalis. The last one, the wife of one of the patients with cerebrospinal lues, had a four plus Wassermann. Her only symptom was that of being tired, but spinal puncture, X-ray, and neurological studies were entirely negative. She cleared after a few doses of salvarsan and bismuth. The cerebrospinal cases are apparently arrested at this writing.

The Group With Sinus Infection. These, of course, cleared with appropriate treatment. No case was operated. Ten other cases of sinus infection were noted in this series but were overshadowed by other pathology. It was noted, however, that in eight cases the sinus infection cleared when associated pathology was removed.

The Myxedema Group. The results of the administration of thyroid in these four cases were striking. It is our custom in giving this drug to begin with one-tenth grain doses and slowly increase them up to the required amount. Every case showed slight improvement on one-half grain per day, but still greater improvement on one grain. In two cases it required three grains per day before satisfactory results could be obtained.

The remainder of the cases require but little discussion. All of the four with infected teeth improved within a month after their extraction. Chlorosis was improved by iron, and the two uterine fibroid cases were relieved by operation. The two cases of cerebral arteriosclerosis and one of chorea showed but little improvement under treatment.

Conclusions

1. The nervous-tired and run-down patient is regarded too lightly.
2. Organic pathology was found in 113 cases out of 120 patients presenting this group of symptoms.
3. It is poor practice to give iron, arsenic and other tonics in these cases without considerable study.
4. Incipient tuberculosis, chronic appendicitis, and early thyroid disease formed a large percentage of the cases.
5. These patients require exhaustive study before a diagnosis is possible.

1606 *Twentieth Street, Northwest.*

If you don't succeed the first time, try again—a hen doesn't get a bug every time she pecks.—*Selected.*

POST-PARTUM CARE OF CONFINEMENT CASES.*

By R. H. WOOLLING, M. D., Pulaski, Va.

Post-partum care of confinement cases, or care of the mother during the puerperium, means the care of the mother during that period which extends from the delivery of the ovum to the time when the return of the genitalia to the non-pregnant state is complete,—that is, as near complete as it will ever become, for the parts never return to the exact condition in which they were before pregnancy. This usually means a period of from six to eight weeks. In common usage, the puerperium means the time the patient is in bed after labor.

I once heard a physician make the statement in a paper he was presenting to a society, that any physician who allowed a perineum to be damaged to the extent of a second or third degree tear was incompetent. He would probably have said that any physician who had any morbidity per cent in the puerperium with his patient was also incompetent. We know that this is not correct and fair to physicians. The best obstetricians are at times faced with injured uteri, vaginae and perinei, and with a post-partum period not normal.

Before we discuss the care of a puerpera, let us consider just in what condition she is left, just what changes have taken place in her general condition, and in her uterus, vagina and perineum.

It is surprising how little the general condition is affected in some cases, and how much it is affected in others, apparently of the same severity.

A woman just after labor is more sensitive to irritants. A great many of them have a slight rise of temperature, soon after delivery, which should disappear in a short time. The pulse usually runs in normal cases from 60 to 78. The blood vessels immediately after labor are soft; very soon the tension is increased, and then sinks to normal or below. I am speaking, of course, of normal cases. A slow pulse with a high tension, or a gradually increasing tension, is a danger signal. It indicates a possible eclamptic condition. A very rapid pulse is also a danger signal, indicating possibly a hemorrhage, or heart pathology.

The leucocyte count, which usually runs high or higher than normal during labor, now drops. The respiration is not much affected. The skin is more active. There is often retention of urine for the first twenty-four hours, or longer. The patient is usually thirsty, but most often cares very little for food. There is usually constipation and moderate tympany, which is in part due to a slight intestinal paresis.

As I said above, the changes in the general condition of the patient just after delivery are, in normal cases, usually slight. The local changes are always marked, and it is necessary to understand these changes in order to treat the puerpera intelligently.

Just after birth the interior of the uterus is really one large wound. The same may be said, with modification, of the vagina and perineum, because there are numerous larger or smaller lacerations, bruises and scraped surfaces. These, in the absence of infection, heal with very little inflammatory reaction. At the placental site there are immense veins containing superficial thrombi. Thrombosis occurs in the walls of the deeper veins only in pathologic cases. This condition of the interior of the uterus, of the vagina and of the perineum, explains the ease of infection and the severity of the disease if it once gains entrance.

The pelvic floor, containing muscle, fat and fascia, is infiltrated with bloody serum, full of small suggillations, even blood. The muscle fibers are torn and over-stretched. Many minute or often large scars are left, which result in atrophy and a weakened pelvic floor. If examined after four to eight weeks, the vagina and pelvic floor are relaxed and show signs of hyper-involution. I emphasize this now because I will refer to it later when I discuss the length of time a puerpera should stay in bed, and the amount of exercise she should be allowed.

Conduct of the Puerperium.

After delivery of the placenta, the vulva region is cleansed of blood clots by the physician, and a sterile pad applied. An abdominal pad may be used to give the patient a sense of comfort, and to please her, not with the idea, of course, that it does any good, either to prevent hemorrhage, or to improve her figure later on. Personally, I rarely use a binder; if it is used, it is applied just snug enough to give a sense of comfort to the relaxed abdominal muscles. No douches should be given. Whatever moving is necessary should be done

*Read before the Southwestern Virginia Medical Society, at Christiansburg, Va., September 23-24, 1930.

with extreme gentleness. The uterus should be kept firm, this to prevent bleeding and air embolism. Some authorities, among them DeLee, whose textbook I have used principally for reference, think it extremely important to keep the legs close together, in order to lessen the danger of air embolism.

After the bed and patient are cleaned and dressed, the room should be cleared and darkened that the patient may rest. Heat is applied to the feet. If hemorrhage has not occurred in one hour, the physician may feel reasonably comfortable.

The aseptic care of the patient during the puerperium is second in importance only to the aseptic care during labor. The vulva should be treated as an open wound, which in reality it is. The vulva pads are changed as often as they become soiled, and after each urination and defecation; also as a routine three or four times a day. After each urination and defecation the parts should be dressed,—that is, with the patient on a bedpan, a 1 to 2,000 bichloride solution or some antiseptic is poured over the parts, which are then gently touched with sterile gauze. The nurse's hands are always rendered sterile before dressing the perineum. If there is any odor, two per cent carbolic acid may be used. This care is kept up for nine of ten days. No douches are given. The patient should not touch the genitals. No internal examinations are made unless there is some positive indication for so doing. The parts are left severely alone.

Diet.—During the first twelve to eighteen hours it is probably best to give liquids; then give a soft diet for two or three days. After the bowels have acted, and after three days have elapsed, a fairly generous diet may be given, remembering that a person in bed, without exercise, cannot digest as heavy a diet as when exercising.

The bladder should always be emptied during the first twelve hours after delivery. Owing to the bruising of the neck of the bladder, spasm of the sphincter, and position of the patient, there is often difficulty in getting the patient to void. It is well to use all means possible to get the bladder to act, such as putting a pad dipped in hot sterile water over the pubis, or placing a hot fomentation over the bladder, or even letting the patient be raised up over a bedpan, before resorting to the catheter. Giving an enema will often cause the patient to void. If necessary to use catheter, it is not necessary to re-emphasize the importance of the strictest asepsis.

Bowels should act on second or third day. It is best to give some laxative to produce the first evacuation, and caster oil is as good as any. After this an enema may be used, with an occasional mild laxative.

The breast should be looked after just as carefully and as aseptically as the vulva. It is needless to go into detail. Before the baby nurses the first time, the breast should be washed with soap and water, then with bichloride solution. Of course after that, boric acid solution is used before and after each nursing.

A breast binder is applied just tight enough to prevent sagging. The pulse and temperature are recorded at regular intervals. The pulse is a more sensitive indicator of abnormalities than the temperature, but less certain because it is so easily affected.

Any temperature above 99.5° should be considered abnormal, and its cause sought. A chill should not be considered simply a nervous manifestation because no other abnormalities can be found at the time. Watch the patient for developments. A chill usually means more or less trouble.

After pains are due to lack of tone of the uterine muscles. If very severe in a primipara, they make one suspicious of infection or retention of clots or placental fragments. If very severe, relieve them by aspirin or amytal compound; if necessary, use an opiate as rest and comfort are necessary at this time. If there is any history of mental disease in the family it is doubly important to overcome any condition of sleeplessness promptly.

The general treatment is the same as for any bed patient. No visitors should be allowed for the first two days and only near relatives for first week.

Now as to the time of getting up,—a question about which there is so much difference of opinion: In a normal puerperium, DeLee allows the mother to sit up in bed on the sixth day, to get out of bed in a chair for one hour on the ninth day, and to walk about the room by the end of the second week. So many things influence the puerperium that it is a risky thing to tell the mother that you will keep her in bed a definite time. Even apparently normal cases vary so much in the time it takes them to get back to an approximately normal condition. One mother will be as fit to get up on the ninth day as another will be on the four-

XUM

teenth. The early getting up does not possess all the advantages claimed for it: nor is it as free from danger as claimed by many obstetricians. The pelvic floor is bruised and congested, and it should not be called upon too soon to support the weight of the puerperal uterus. A puerpera should not be allowed to get up as long as the lochia is free: or as long as the pulse is particularly rapid, unless this rapidity existed prior to the delivery; or as long as she has any fever of any consequence. The conditions above referred to are often improved, however, by elevating the head of the bed, to procure better drainage.

EUGENIC STERILIZATION IN VIRGINIA.*

By J. S. DeJARNETTE, M. D., Staunton, Va.

Eugenics, or the science of generating well, has been and is practiced in all countries on the lower animals, but man seems to have neglected his own breeding and left it to the whims and fancies of the individual, so that, in consequence, the good and the bad, the weak and the strong have bred our race with little or no concerted objective; in fact, many minimize heredity and claim environment is three-fourths of the determinor of the individual, and yet these same dissenters acknowledge and bow to the laws of heredity in breeding their cattle, their hogs, and their dogs and even their garden seed. This class claims that elimination of the misfit is to be obtained by preaching, teaching and training; but while environment is of vast importance, I cannot but think we stand a much better chance to get eagles by putting eagles' eggs under hens than by putting hen's eggs under eagles. It is useless to argue against heredity when all living things proclaim it.

According to Mendel's law, environment cannot change except by extremely slow degrees. "Under nature's plan we breed from the top principally; today we breed from the bottom more rapidly." The feeble-minded woman will have four children to the college woman's one and is mentally unable to take care of her offspring properly, surrounding them with a feeble-minded atmosphere, in addition to their handicaps of a feeble-minded inheritance.

Arguing for heredity is simply insisting upon the obvious. Practically every one admits there are certain classes who should not be allowed to reproduce their kind, e. g., selected cases of feeble-minded, insane, epileptics, bleeders, victims of Huntington's chorea, hereditary blindness, etc. There are many conscientious objectors to eliminating reproduction in such classes by sterilization, which method they consider brutal and contrary to the teaching of the Bible, prefering to segregate a few of these unfortunates and let the rest reproduce *ad libitum*, weakening the race and burdening society.

Our common experience tells us that many human misfits are just as much manufactured articles as plows and harrows. The first law of sterilization in the United States was passed by the legislature of Pennsylvania in 1905, but was vetoed by the Governor,—his reasons for the veto I have not been able to find. When the law was first proposed in Virginia it was laughed out of the Committee, but in 1924 she was the first State in the Union to pass a sterilization law that stood the test of the Court of Appeals of the United States. Justice Holmes, in handing down the decision of the court, said in part: "We have seen more than once that the State may call upon the best of its citizens for their lives; it would be strange indeed if we could not call upon those who already sap the strength of the State for those lesser sacrifices often not felt to be such by those concerned. In order to protect us from being swamped with incompetents, it is better for all the world, instead of waiting to execute degenerate offspring for crime or let them starve for their imbecility, if society can prevent those who are manifestly unfit for continuing their kind. The principle that sustains compulsory vaccination is broad enough to cover cutting the Fallopian tubes. Three generations of imbeciles are enough * * *."

Once there was a very dangerous curve in a mountain road, and, traffic being heavy at this curve, terrible accidents happened frequently and many passengers were killed or wounded. A philanthropic man built a large hospital at the foot of this mountain and was soon doing a wonderful work taking care of the injured and crippled, and won for himself an enviable name as a great benefactor; but one day a wise man came and was told of the terrible accidents, saw the dangerous curve and suggested a wall built around the edge to prevent the tumble. This one ounce of prevention was worth many pounds of cure. The hospital was

*Read before the Lions Club, Altoona, Pa., April 25, 1930.

closed for lack of patients. And so, I believe, sterilization, if given a fair trail, will be the great wall built around the mountain curve and will practically close the hospitals for defectives at the foot of the mountain.

History.

Castration has been practiced from the time when the memory of man runneth not to the contrary, but eugenic sterilization really began in America in 1899 when Dr. Harry Sharp, at the Indiana State Reformatory, began to sterilize by the new method vasectomy. It seems strange vasectomy and salpingectomy should have been neglected so long.

A Pennsylvania legislature passed the first sterilization law in the United States in 1905, but it was vetoed by the Governor.

Indiana passed a law for this operation in 1907, but it was held to be unconstitutional by the court in 1920.

California has sterilized twice as many individuals as all of the rest of the States of the Union, and up to January 1, 1929, had sterilized 6,225.

At present the following twenty-two states have sterilization laws in operation: Arizona, California, Connecticut, Delaware, Idaho, Iowa, Kansas, Maine, Michigan, Minnesota, Mississippi, Montana, Nebraska, New Hampshire, North Dakota, Oregon, South Dakota, Utah, Virginia (1924, found constitutional in 1927), West Virginia, Wisconsin, and North Carolina.

Statistics.

The mental test of 2,000,000 men in the National Army showed 6 per cent below 70. Intelligence quotient, 120,000. Estimating 4 per cent of our population below 70. Intelligence quotient would show 4,800,000 technically feeble-minded. Only 60,000 are in institutions.

Heredity.

Heredity is the transmission of the parents' qualities to their offspring and must take place prior and up to birth. The law of heredity was worked out by Gregor Mendel on white and red sweet peas, and is a scientific illustration of what to expect from it.

Old John Kallikak, of New Jersey, in five generations had 480 descendants by a feeble-minded girl: 434 were feeble-minded, criminals or defectives, and only forty-six normal, and they cost the State of New Jersey over $1,000,000.

Cost

Estimating 264,000 insane and feeble-minded in the State Hospitals at $350.00 per capita per year, we are spending annually $92,000,000 for their care, and are allowing them to reproduce in many instances by giving them furloughs or discharging them. There are cases where three generations of one family are in the hospital at the same time. In one State Hospital in the United States a man was discharged from the hospital forty-seven times as recovered, finally dying insane in the hospital. I knew one woman to be sent to the Western State Hospital of Virginia five times with puerperal mania. This occurred many years ago and, of course, would not happen in Virginia now.

Percentage

One-half of one per cent of our people, or 600,000 have a mentality below seven years and need supervision; one per cent, or 1,200,000, have a mentality between seven and nine years and also need supervision; four per cent of our population have a mentality below .75 of the average man. Four per cent, or one in twenty-five, will be sent to a State Hospital in the United States.

Segregation

The sex call is the strongest of man's instincts and to deny the defectives and the insane their sex life is a cruelty. To allow them to reproduce is also a cruelty, and an unbearable burden to the State. The children from such parentage make our great downward streams of deadbeats, tramps, criminals, dependants, paupers, etc. What chance has a feeble-minded girl out in the world either in a feeble-minded environment or with those of higher intelligence?

Sterilization

To my mind, sterilization is by far the kindest and best method to render the unfit fit to live on the outside, to make a living and to have a social life not very different from his more fortunate brother. He is relieved from the responsibility of children, whom he cannot properly care for, and from the dangers of infection—orchitis in the male, and salpingitis in the female, by the method of operating. The Virginia Sterilization Law, written by Senator Aubrey E. Strode and principally through the efforts of Drs. Priddy and Henry, Governor Trinkle and myself, was passed

XUM

unanimously by the Assembly in 1924. Four years before I presented a sterilization law and was laughed out of the Committee. This proves Abraham Lincoln's theory that "nothing is ever settled until it is settled right."

Up to May 21, 1930, we had sterilized 600 in Virginia. In the Western State Hospital ninety-eight: thirty-three salpingectomies, sixty vasectomies, and five X-ray. We are just getting into good working trim, and expect to sterilize 500 per year in the five hospitals.

After sterilization, we can furlough our patients much more satisfactorily, with no fear of reproduction.

A plan might be worked out to sterilize one of a union of two units and so save one operation. The operation does not seem to interfere with sexual desire or gratification, and in the male it is done under local anesthesia with no more pain than the stick of the hypodermic needle. The patient does not have to go to bed after the operation, and some of our patients have driven their cars home the same day. In the male there is not even a scar four weeks after the operation and the patient does not have to stop work.

I really believe we are doing work in Virginia which will lessen our load, prevent a great deal of unhappiness, murders, crimes, drunkenness and accidents, and our State will be safer, saner and better to live in because of the passage and practice of the Sterilization Law. "If the feeble-minded are not treated properly they will surely have their revenge."

Method.

Tying and cutting the vas.

Tying and cutting the Fallopian tubes.

Ovariectomy.

X-ray.

Dilating uterus and electrically cauterizing at entrance of Fallopian tubes. This method is far from being perfected.

MENDEL'S LAW*

A Plea for a Better Race of Men

Oh, why are you men so foolish—
  You breeders who breed our men
Let the fools, the weaklings and crazy
  Keep breeding and breeding again?
The criminal, deformed, and the misfit,
  Dependent, diseased, and the rest—
As we breed the human family
  The worst is as good as the best.

Go to the house of some farmer,
  Look through his barns and sheds,
Look at his horses and cattle,
  Even his hogs are thoroughbreds;
Then look at his stamp on his children,
  Lowbrowed with the monkey jaw,
Ape handed, and silly, and foolish—
  Bred true to Mendel's law.

Go to some homes in the village,
  Look at the garden beds,
The cabbage, the lettuce and turnips,
  Even the beets are thoroughbreds;
Then look at the many children
  With hands like the monkey's paw,
Bowlegged, flatheaded, and foolish—
  Bred true to Mendel's law.

This is the law of Mendel,
  And often he makes it plain,
Defectives will breed defectives
  And the insane breed insane.
Oh, why do we allow these people
  To breed back to the monkey's nest,
To increase our country's burdens
  When we should breed from the good and the best.

Oh, you wise men take up the burden,
  And make this your loudest creed,
Sterilize the misfits promptly—
  All not fit to breed.
Then our race will be strengthened and bettered,
  And our men and women be blest,
Not apish, repulsive and foolish,
  For we should breed from the good and the best.

References.

E. S. Gosney and Paul Popenoi: Sterilization for Human Betterment.

J. H. Bell, M. D., Colony, Va.: Remarks on Eugenical Sterilization.

*By Dr. J. S. DeJarnette and previously published in **Bulletin of Western State Hospital**.

COMPLETE SEPARATION OF PLACENTA BEFORE ADVENT OF PAINS.*

By M. C. NEWTON, M. D., Narrows, Va.

Mrs. W. M. C., age thirty-eight, corpulent female, was treated by me during entire pregnancy, which was the eighth for her. She had a history of one still-birth and three infantile deaths.

The whole of her pregnancy was with complications. She had a mild nephritis and pyelitis, some myocardial decompensation, with attacks of dyspnea, edema of lower extremities and lower abdomen, and occasionally hysteria. Blood pressure was 180/115.

Her date of delivery was fixed at June 15th, or thereabouts.

On May 27, 1930, she felt and complained to her husband of tenderness over uterus on left anterior side.

At 7:00 A. M., May 28, 1930, while in kitchen laughing and joking with family she felt fluid begin to trickle, then to gush down her lower

*Read before the Southwestern Virginia Medical Society, at Christiansburg, Va., September 23-24, 1930.

limbs. She immediately fell to the floor and was allowed to remain there for several minutes while they sent for me.

Examination showed dilatation somewhat larger than a quarter, admitting two fingers, a dilatation that was noted sixty days before. Fetal head was in position and around head close to cervix could be felt a soft slick mass, which proved later to be a blood clot. Diagnosis of placenta praevia was made. Patient was examined five minutes later, when the diagnosis was doubted. External bleeding was stopped by packing. Pulse 120; respiration 22.

Patient had lost probably three pints of blood or more and was showing effects of it.

She was carried to hospital at 8:30 in ambulance. Small cots were expelled on way there. Put to bed at 9:00 A. M., complaining of pain in abdomen. Given coramine, 1 c.c., and caffeine sodio-benzoate, amp. 1, at this time and again at 10:00 and 10:30.

At 11:00 A. M., she was given glucose intravenously; pulse 120; respiration 28; temp. 97° ax. Digalen and caffeine were given. Nauseated and vomiting; large amount of vaginal bleeding at 12 noon.

At 1:00 P. M., she was taken to operating room. Ether anesthesia was administered. Cervix was manually dilated by Dr. W. C. Caudill, during which much dark blood exuded. Version done. A still-born male child was delivered—weight seven pounds. Placenta followed at once, accompanied by about three quarts of dark blood and clots. A pituitary ampule was given at once, also 2 c.c. of digalen and ten minims of adrenalin. Patient was in cold sweat, and was almost pulseless, extreme shock, one might say. Glucose was given at 1:45 P. M.; at 5:10, unable to count pulse. Respiration shallow. Taken to operating room for blood transfusion. Nauseated and vomiting at frequent intervals for seven days.

At 3:40 P. M., May 30th, she was given another transfusion. Continued vomiting.

On June 1st, glucose was given intravenously. Codeine was given for rest. Caffeine was administered every six or seven hours for several days, followed by digitalis by mouth until discharged from hospital.

On the fourth day she developed a severe diarrhea which continued for six days, thus considerably diminishing her chances for recovery.

Patient ran a temperature from normal to 106, with a pulse up to 150. Sapremia partially caused by pyelitis and diarrhea also complicated. Returned home on June 20th, and has continued to improve until now she is in best health for years.

Examination of placenta showed two diseased areas—one about 10 cm. in diameter, the other about 4 c.c. in diameter. Coagulated blood also showed in the villi and there was evidence of separation of some several hours.

We attribute the patient's ability to go so long between the time of placental separation and delivery to the fact that the child's head was in the cervix, plus contniued contraction of the uterus, which, to an extent, controlled hemorrhage.

A REACTION FOLLOWING PHENOLSULPHONEPHTHALEIN INJECTION.*

By W. S. L. McMANN, M. D., Richmond, Va.

The following case is reported because it appears to be unusual and possibly of some clinical significance.

E. C., was admitted to the hospital July 23, 1930, with a diagnosis of gonorrhea complicated by suppurative inguinal adenitis. The glands on each side were enucleated. The post-operative course was normal. Early on the morning of the 25th, 1 c.c. of phenolsulphonephthalein solution was given intravenously for a routine renal function test. Immediately the patient sneezed several times, his face became flushed, he was dyspneic and complained of tingling all over his body. Typical urticarial wheals appeared, following the course of the intercostal nerves as if tattooed. The patient had a marked fear of impending death. There was no reaction at the site of injection. The patient was normal in a half hour.

COMMENT.—A few hours before, the patient had complained of numbness in his feet but this is most likely irrelevant.

Nothing in the past history gave any clue as to the cause of this reaction. There had been no asthma nor any sensitiveness to any drug. He had not been taking any phenolphthalein as a laxative. Ten days before, the patient had been given 20 c.c. of a 1 per cent mercurochrome solution intravenously, and four days before, this dose had been repeated. After

*Stuart Circle Hospital, Department of Urology.

each injection, as was expected, he had a severe chill, a rapid rise of temperature and profuse perspiration. This, however, quickly subsided.

PREGNANCY WITH COMPLICATIONS—PREMATURE RUPTURE OF MEMBRANES; FRANK BREECH PRESENTATION; EPISIOTOMY; VAGITUS UTERINUS; HEMATOMA OF PERINEUM.

By DANIEL H. BESSESEN, M. D., Minneapolis, Minn.

The patient, a married woman of twenty-one, living without worry or anxiety in comfortable surroundings, came to the clinic for her first pregnancy at approximately five months' gestation. She had started her menses regularly every twenty-eight days at seventeen years, without pain, or discharge. The last period was April 27, 1929.

She had been an unusually well person, having suffered none of the usual childhood diseases with the exception of measles, and aside from a fracture of the clavicle at ten years of age, had no ill health.

Physical examination showed a well developed, well nourished young woman with normal organs and a uterus enlarged with five months' fetus. This was larger by several months than the history would indicate.

On December 16, 1929, the patient, while crossing a street, stepped in a hole and fell. She boarded a street car, attended a theatrical performance, and while there noticed some fluid coming away. When she arrived home she was wet again and went directly to bed. There was still a slight showing in the morning, less than the night preceding, though there was no pain in the back, uterus, bladder or anywhere else. It was believed that the membranes had ruptured and the patient was kept in bed, resting quietly. There was a possible chance for recovery because of the apparent fulness of the uterus and the fact that the fluid diminished in amount.

At 5:00 A. M. on December 27, 1929, the patient went into labor, and was taken to Asbury Hospital at 7:30. The body of the child lay in sacrum right anterior position with the buttock directly over the pelvic outlet. The buttock was pushed up and the feet brought down when dilatation was complete. After this maneuver, the fetal heart slowed to 80 and it was thought best to extract immediately. Breech extraction was easy with the small child and deep left episiotomy. The child's body was held over the pubes by the assistant, the perineum was depressed by the nurse. The child breathed at the perineal level, while the head was still in the vagina, one minute and fifteen seconds after the passing of the cord over the pelvic floor. Delivery was completed by three minutes and thirty seconds. Air was present in the uterus during delivery, and was expressed with the contraction of the uterus and delivery of the placenta.

Following delivery of the patient there appeared on December 30th, a large ecchymosis or hematoma—a subcutaneous hemorrhage in the right perineum. The patient's condition remained good, with slightly rising temperature each day to 100.0—100.4°. The hematoma was incised on December 31st, and much soft blood expressed. A hot compress was applied. The wound drained sanguineous fluid for a few days and then closed promptly.

The rupture of membranes usually leads to loss of the child if it occurs before viability, and to prematurity with the viable child. Occasionally, when the rupture is small and appears high in the cavity of the uterus, it may be sealed and the pregnancy continue uninterrupted. The escape of even a moderate amount of fluid will cause labor to start.

The frank breech presentation is a difficult position for the mother to deliver unaided. It is made much easier by converting it into a single or double footling when dilatation is complete. At this time, if the mother is allowed to arouse from the anesthesia, the delivery is rapid, without much danger of injury to either mother or child.

Any obstetrical case, whether operative or non-operative, should receive vaginal sterilization. This may be done with one of three drugs: mercurochrome, hexylresorcinol or merthiolate. The use of vaginal sterilization will reduce morbidity from infection at least 50 per cent, and when infection does occur, it is commonly less severe.

Vagitus uterinus—air in the uterus—does occur with rupture of the membranes or it may have been due in this case to the presence of the hand in the perineum, allowing the air free access to the child's mouth as it lay within the pelvis above the perineum. It is important as a factor of puerperal infection and constitutes another reason for utilizing vaginal sterilization in the always possibly infected

obstetrical field,—another importance of vagitus uterinus is from the medico-legal standpoint. With air in the uterus, it is possible for the child to breathe several hours or even days before delivery and then be born alive or dead.

The hematoma of the right perineum was probably due to rupture of the levator ani muscle through its fibers or through its attachment at the arcus tendineus. Other muscles or their origins or insertions may have been at fault but the most likely point of injury would be those mentioned. Lacerations of the cervix or perineum depend upon three activating principles; first, the downward force of the birth product; second, the dilating mechanism; third, the evagination of the uterine mucosa and vaginal mucosa. Any or all of these powerful forces may be responsible for tears—though the very position and direction of tears may lead to recognition of the causative mechanism.

The elevation of temperature is hard to account for. The healing of the perineum was prompt, both the episiotomy and hematoma incision closed without the appearance of infection. The blood with its absorption may cause fever. However in the presence of operative manipulation, with air in the uterus, and lacerations and hematoma the picture is extremely complicated and difficult of interpretation. The application of vaginal sterilization may be preventive in many cases of otherwise severe puerperal infection. In this case, the infection might have been much more violent had it not been for the sterilizing action of the antiseptic in the vagina.

The final outcome was quite satisfying. The mother and premature baby both convalesced splendidly with very definite progress before leaving the hospital on the twelfth day, postpartum.

Medical Arts Building.

Miscellaneous

White House Conference on Child Health and Protection.

The White House Conference, composed of over 1,200 National Leaders in Public Health, Education and Public Welfare, met in Washington, D. C., November 19-22, 1930, at the request of President Hoover to report and discuss the findings which have taken them more than a year to compile. This large group of workers, all holding responsible positions, have given their vacations, Sundays, evenings, and every spare moment, without compensation, in order to make the surveys necessary to make such a comprehensive report at this meeting. Dr. Ray Lyman Wilbur, Secretary of the Department of Interior, Chairman of the Conference, presided at all general sessions of the 3,000 delegates in attendance, and gave the final summary as follows:

Every American child has the right to the following services in its development and protection: besides the paramount right to be understood:

1. Every prospective mother should have suitable information, medical supervision during the prenatal period, competent care at confinement. Every mother should have postnatal medical supervision for herself and child.

2. Every child should receive periodical health examinations before and during the school period including adolescence, by the family physician, or the school or other public physician, and such examination by specialists and such hospital care as its special needs may require.

3. Every child should have regular dental examination and care.

4. Every child should have instruction in the schools in health and in safety from accidents, and every teacher should be trained in health programs.

5. Every child should be protected from communicable diseases to which he might be exposed at home, in school or at play, and protected from impure milk and food.

6. Every child should have proper sleeping rooms, diet, hours of sleep and play, and parents should receive expert information as to the needs of children of various ages as to these questions.

7. Every child should attend a school which has proper seating, lighting, ventilation and sanitation. For younger children, kindergartens and nursery schools should be provided to supplement home care.

8. The school should be so organized as to discover and develop the special abilities of each child, and should assist in vocational guidance, for children, like men, succeed by

XUM

the use of their strongest qualities and special interests.

9. Every child should have some form of religious, moral and character training.

10. Every child has a right to a place to play with adequate facilities therefor.

11. With the expanding domain of the community's responsibilities for children, there should be proper provision for and supervision of recreation and entertainment.

12. Every child should be protected against labor that stunts growth, either physical or mental, that limits education, that deprives children of the right of comradeship, of joy and play.

13. Every child who is blind, deaf, crippled or otherwise physcially handicapped should be given expert study and corrective treatment where there is the possibility of relief, and appropriate development or training. Children with subnormal or abnormal mental conditions should receive adequate study, protection, training and care.

14. Every waif and orphan in need must be supported.

15. Every child is entitled to the feeling that he has a home. The extension of the services in the community should supplement and not supplant parents.

16. Children who habitually fail to meet normal standards of human behavior should be provided special care under the guidance of the school, the community health or welfare center or other agency for continued supervision or, if necessary, control.

17. Where the child does not have these services, due to inadequate income of the family, then such services must be provided to him by the community.

18. The rural child should have as satisfactory schooling, health protection and welfare facilities as the city child.

19. In order that these minimum protections of the health and welfare of children may be everywhere available, there should be a district, county or community organization for health education and welfare, with full-time officials, coordinating with a state-wide program which will be responsive to a nation-wide service of general information, statistics and scientific research. This should include:

(a) Trained full-time public health officials with public health nurses, sanitary inspection and laboratory workers.

(b) Available hospital beds.

(c) Full-time public welfare services for the relief and aid of children in special need from poverty or misfortune, for the protection of children from abuse, neglect, exploitation or moral hazard.

(d) The development of voluntary organization of children for purposes of instruction, health and recreation through private effort and benefaction. When possible, existing agencies should be coordinated.

It is the purpose of this Conference to establish the standards by which the efficiency of such services may be tested in the community and to develop the creation of such services. These standards are defined in many particulars in the Reports of the Committees of the Conference. The Conference recommends that the Continuing Committee to be appointed by the President from the Conference shall study points upon which agreement has not been reached, shall develop further standards, shall encourage the establishment of services for children, and report to the members of the Conference through the President.

THE MAN BEHIND THE SMILE

I don't know how he is on creeds,
I never heard him say;
But he's got a smile that fits his face
And he wears it every day.

If things go wrong he won't complain,
Just tries to see the joke;
He's always finding little ways
Of helping other folk.

He sees the good in everyone,
Their faults he never mentions;
He has a lot of confidence
In people's good intentions.

You soon forget what ails you
When you happen 'round this man,
He can cure a case of hypo
Quicker than the doctor can

No matter if the sky is gray,
You get his point of view;
And the clouds begin to scatter,
And the sun comes breaking through.

You'll know him if you meet him,
And you'll find it worth your while,
To cultivate the friendship of
The "Man Behind the Smile."

—*Selected.*

President's Message

The Medical Society of Virginia is both a scientific and a business organization, and both of these functions are devoted solely to the interests of the medical profession. They are entirely separate, and yet mutual in their aims and results.

The scientific sessions are open to all the members, but the business affairs of the Society are entrusted to its House of Delegates, composed of representatives chosen from each component county Society in the State, and thus, while there is only one meeting annually, yet the work of the Society between annual sessions is being administered continuously by committees, both Standing and Special, selected by the House of Delegates, and appointed annually by the President.

This arrangement of division of labor through committees gives opportunity to a large and increasing number of the members to serve the Society, and next to the Councilors, their duties are the most important, and certainly, the most representative of all of the Society's interests and activities. Believing that a better idea of the number and diversity of these various agencies and their specific work can be realized by grouping these committees, which are executive in character, they are herewith given, and the personnel of each may be seen elsewhere in this issue under the "Proceedings of Societies."

These Committees are as follows:

STANDING COMMITTEES

1. The Committee on Scientific Work and Clinics;
2. The Committee on Legislation and Public Health;
3. The Committee on Publication and Program;
4. The Medical Economics Committee;
5. The Committee on Medical Education and Hospitals;
6. The Membership Committee; and
7. The Committee on Ethics and Judiciary.

SPECIAL COMMITTEES

1. The Walter Reed Commission;
2. The Committee on Maternal Welfare;
3. The Committee for Regulation of the Training of X-ray and Clinical Laboratory Technicians;
4. The Library Committee;
5. The Committee on History of Medicine in Virginia;
6. The Child Welfare Committee;
7. Department of Clinical Education (with the Advisory Board);
8. Committee on Group Societies;
9. The Public Relations Committee, State and County;
10. Military Affairs and National Defense Committee;
11. The Committee on Tuberculosis Clinics;
12. The Committee on Mental Hygiene;
13. The Advisory Board to the Woman's Auxiliary, and
14. Committee of Ex-Presidents to Administer Trust Fund for Post-Graduate Clinical Education.

It is requested that members of the various committees cooperate with the Chairman of any designated committee, and give him the benefit of their best judgment and service.

Constructive suggestions by members of the Society as to the special work of any committee will, also, be most acceptable, and may be addressed to the Chairman of any one of the above named committees.

All of the committees have been assigned special work by the Society, and a report of the activities of each will be read at the annual meeting.

J. ALLISON HODGES, M. D., *President,*
Medical Society of Virginia.

XUM

Department of Clinical Education

OF THE MEDICAL SOCIETY OF VIRGINIA

Annual Meeting.

The Advisory Board composed of the members of the Committee on Scientific Work and Clinics and the Committee on Medical Education and Hospitals held a joint meeting with the Department of Clinical Education at the office of Miss Agnes Edwards, Secretary of the Medical Society of Virginia, in Richmond, on December 11th. All members of these Committees were present with two exceptions. Dr. J. Allison Hodges, President of the Medical Society of Virginia, and Dr. W. T. Sanger, President of the Medical College of Virginia, also attended the meeting and took active part in the discussions.

After due consideration the same members were selected to serve again in the Department of Clinical Education, Dr. I. C. Harrison, President-elect, becoming Chairman in place of Dr. Hodges. It was thought wise not to change the personnel at this time because of the desire to make use of the experience of those already in the work, to help place the undertaking on a firm and substantial basis.

Everyone present showed intense interest in the work of the Department, and the Chairman feels that with such an able corps of assistants great progress should be made during the year.

Throughout the past year Dr. Hodges as Chairman of this Department has had an article on this page in each issue of the MEDICAL MONTHLY, discussing the work of the Department, setting forth his plans for post-graduate medical education and appealing for cooperation to the Councilors of the State Society and to the leaders in the various Component Societies.

It will be our policy to carry out the same plan with some changes which will, I think, add to the general interest of these articles. I shall at various times during the year ask other members of the Department of Clinical Education to contribute short papers giving their views on various phases of the work, and feel sure this will add materially to the effectiveness of our whole undertaking. We may also from time to time ask specialists to discuss the importance of holding clinics in certain specified diseases. In some cases these may be teachers connected with one of our Medical Schools and in others general practitioners or specialists in private practice. I feel that this departure will meet with the approval of the membership of the State Society.

At a meeting of the House of Delegates in Norfolk a motion was adopted asking the Department of Clinical Education and the State Health Department to evolve a plan for the better handling of venereal diseases and suggesting the employment of a full-time health officer in the Venereal Disease division, as soon as possible. At the meeting of the Department of Clinical Education at Richmond on December 11th, Dr. W. T. Sanger, President of the Medical College of Virginia, presented a paper with a set of resolutions prepared by himself and Dr. Flippin, Dean of the Medical Department of the University of Virginia, bearing on better plans for the handling of prenatal and postnatal cases throughout the State. There is a like need for special efforts in other departments of medicine too numerous to mention at this time.

I wish to call special attention to this paper of Dr. Sanger's, which was heartily endorsed by the membership of the Department of Clinical Education. Every member of the Medical Society of Virginia should read this paper. The statistics contained in it bearing on infant and maternal mortality are startling enough to stir every thoughtful physician in Virginia to lend a helping hand.

The Committee suggested by Dr. Sanger and Dr. Flippin has been selected. Definite plans will be worked out by this Committee and submitted for approval to the two State medical schools and to the Department of Clinical Education. Dr. Sanger's paper follows immediately in this issue of the VIRGINIA MEDICAL MONTHLY. It is sincerely hoped that it may be discussed at the meetings of the various county societies. This department will be glad to have your reaction and comments on the proposed undertaking.

I. C. HARRISON, *Chairman,*
President-elect, Medical Society of Virginia.

SUGGESTED PLAN FOR HANDLING PRENATAL AND POSTNATAL CASES IN VIRGINIA.

TO THE DEPARTMENT OF CLINICAL EDUCATION,
MEDICAL SOCIETY OF VIRGINIA,
RICHMOND, VIRGINIA.
GENTLEMEN:

Last summer a member of the Medical Society of Virginia presented to our institution a detailed plan for holding prenatal and postnatal clinics in designated rural sections of the State with a view to instructing physicians in the newer procedures in this important field. He also suggested that he had requested a gift for this purpose from one of his acquaintances and asked whether we would cooperate should the Medical Society of Virginia indicate a like willingness. Now that the Society at its recent Norfolk meeting has adopted resolutions of far-reaching import in behalf of an educational program for practicing physicians, including a proposal that State funds be secured for this work to be expended under the direction of a joint committee representing the University of Virginia Medical Department and the Medical College of Virginia, I am taking the liberty of referring to the Department of Clinical Education this plan for prenatal and postnatal clinics for Virginia as submitted to our institution last summer with certain recommendations, believing that the merit of the plan justifies the consideration of this department. It should be remembered that I am only the spokesman for this project.

NEED.—In 1928 in Virginia 16,327 birth certificates were signed by midwives. In one county it is reported that only one out of five deliveries was conducted by physicians and that such conditions prevail elsewhere. It is indicated that in some rural sections, as well as in many cities and towns, little scientific care is being given to prenatal and postnatal cases for whom practicing physicians are responsible. This is thought to be largely due to the fact that many physicians graduated over twenty-five years ago and at that time almost no clinical experience in prenatal or gynecological work was given by the medical schools. Furthermore, the offices of many physicians are not equipped to make prenatal or postnatal examinations. As a result of these conditions thousands of mothers in Virginia are semi-invalids and nervous wrecks. Many are without hope of recovery and many more who do hope to be cured are spending all they possess on sedatives and quacks.

PURPOSE OF CLINICS.—The purpose of the proposed clinics is to instruct physicians in prenatal and postnatal care and to encourage mothers to see physicians before and at least once after delivery.

TYPE OF CLINIC.—It has been recommended that these clinics be held in the physicians' offices, when requested, in the morning, for one physician and in the afternoon for another whenever possible. At certain times and places clinics might be held for groups of physicians. Patients for the clinics are to be secured on the recommendation of the physician and local midwives.

PERSONNEL REQUIRED.—At least one whole-time clinician with teaching ability and a field nurse or perhaps two field nurses, will be required as a minimum. The size of the staff will necessarily depend upon the funds available.

METHOD OF PROCEDURE.—Should the Department of Clinical Education consider this plan favorably, or suggest a better plan, and if the University of Virginia and the Medical College of Virginia then approve, it is suggested that a committee of six be created, two appointed by the Department of Clinical Education of the State Society and two each by the University of Virginia and the Medical College of Virginia. This committee will be charged with working out plans and policies of the Joint Medical Extension Service of the University of Virginia and the Medical College of Virginia, the Medical Society of Virginia cooperating. It is understood that the first and immediate function of this committee would be to complete an organization and formulate definite plans for establishing the prenatal and postnatal clinics suggested in this memorandum. It is further suggested that the committee have all of its plans and policies approved prior to recommending their execution by the Department of Clinical Education, the University of Virginia, and the Medical College of Virginia. It is assumed, moreover, that the committee mentioned above in working out its plans will wish to use to the full the Department of Clinical Education and the membership of the Medical Society of Virginia in executing any and all projects adopted for service to the State in this work of graduate education.

Such a joint medical extension service has previously been considered by the University of Virginia and the Medical College of Virginia in another connection and such a suggestion is offered, by implication at least, in paragraph four of the resolutions adopted at the Norfolk meeting of the State Society for extending the work of educating practicing physicians.

It is fully recognized by the friends of this proposal for prenatal and postnatal clinics that it must have the enthusiastic approval and active support, if put in operation, by the Medical Society of Virginia through its Department of Clinical Education. It is doubtful whether the University of Virginia or the Medical College of Virginia would be inclined to consider this proposal further unless backed at every step by the State Society. Speaking for our institution, I can say without hesitation that this is true. Furthermore, it is my personal view that whenever the joint State medical extension service is set up, on its executive committee, the State Society should be represented. Because of this conviction, I have suggested such representation in the plan outlined above.

Respectfully submitted,

W. T. SANGER,
President, Medical College of Virginia.

SCHEDULED PROGRAMS OF NORFOLK COUNTY MEDICAL SOCIETY.

Monday, January 12, 1931—SECTION ON SURGERY.
Symposium on Pathological Conditions of the Upper Abdomen:
Diagnosis and Medical Treatment. Dr. M. S. Fitchett.
X-Ray Diagnosis. Dr. L. F. Magruder.
Pathological Diagnosis. Dr. L. J. Motyca.
Operative Procedures. Dr. C. C. Smith.

Monday, January 19, 1931—SECTION ON MEDICINE:
Coronary Occlusion, with report of two cases. Dr. C. Lydon Harrell.
Electrocardiographic Results in Coronary Disease. Dr. F. C. Rinker.

Thursday, January 22, 1931—SECTION ON EYE, EAR, NOSE AND THROAT:
Report of the Results of Iridotasis in 14 Cases of Chronic Glaucoma. Dr. B. R. Kennon.

Monday, January 26, 1931—SECTION ON PEDIATRICS:
The Challenge of the Physically Defective Child. Dr. Franklin D. Wilson.
Present Status of Acute Chorea. Dr. Frank H. Redwood.

Members of the State Society are always welcome at these meetings.

Woman's Auxiliary, to the Medical Society of Va.

New Secretary of the Auxiliary.

Mrs. James K. Hall, Richmond, has accepted the position as secretary of the Woman's Auxiliary to the Medical Society of Virginia, for the next two years, to carry on the excellent work which has been done by Mrs. Joseph Bear, also of Richmond, during Mrs. F. W. Upshur's term of office as State president.

Mrs. J. Allison Hodges, Richmond, succeeded to the presidency of the State Auxiliary at the Norfolk meeting. With the acceptance by Mrs. Hall, the list of officers as published in the Auxiliary Department in the December issue of the MONTHLY, is now complete.

Report From the Annual Meeting of the National Auxiliary.

As the report presented by our delegate to the Woman's Auxiliary of the American Medical Association at its Detroit meeting has so much of interest, we take pleasure in presenting it in full in our Department for this month:

MADAM PRESIDENT AND MEMBERS OF THE WOMAN'S AUXILIARY TO THE MEDICAL SOCIETY OF VIRGINIA: I am deeply sensible of the honor bestowed upon me by our President in appointing me a Delegate from this State to the Woman's Auxiliary to the American Medical Association. It was such a delightful inspirational meeting that I wish you might all have been there.

It was the eighth annual meeting of the Woman's Auxiliary to the American Medical Association, and it was held in Detroit, June 23-26, with headquarters at the Tuller Hotel. There were 413 members present, including eighty-five Delegates. While this was the smallest in number of our national meetings, it was conceded to be the most interesting and most constructive of all.

The President, Mrs. Hoxie, Kansas City, Mo., presided. The address of welcome was made by Mrs. Elmer L. Whitney, President of the Auxiliary to the Wayne County Medical Society, who reminded us that the object of the Auxiliary is SERVICE, expressed by creating a better feeling between the layman and the profession and by working out an intensive health program.

The response was made by Mrs. John McReynolds, Dallas, Texas, ex-president of the Woman's Auxiliary to the American Medical Association, and founder of the first County Auxiliary, which was inaugurated in her State of Texas.

Mrs. McReynolds impressed upon us that every local Auxiliary should shoulder the responsibility of settling its own problems. That for its continued success it must have a Social, Philanthropic, and Educational program. She impressed upon us that the choice of officers is most important, saying that an indifferent President makes an indifferent Auxiliary. She strongly counclied the Auxiliary not to enter into medical politics, saying that that is the rock upon which the Auxiliary can break to pieces. She said also the safeguard of the Auxiliary is its Advisory Council, composed of from three to five physicians, men who believe in the Auxiliary and who will display justice and sympathy towards it.

The Treasurer reported a bank balance of $1,544.86. Many dues are delayed because of varying dates of fiscal years in the several States. While there was a listed membership of 12,100, but 9,995 memberships were paid up to date.

A request was made that State Treasurers write "Treasurer" under their names when they write receipt slips.

Three of the Resolutions passed had to do with finance:

RESOLVED, That all State Treasurers be instructed to pay their National dues the last day of the fiscal year of their respective State Auxiliaries.

RESOLVED, That in future, State Auxiliaries pay an initiation fee of $5.00 in order to obtain representation at their first National Convention, thereafter paying full dues at the close of their fiscal years, as heretofore provided.

WHEREAS, The annual meeting of the Woman's Auxiliary to the American Medical Association is always a great inspiration and stimulation to those in attendance, be it resolved that the component State Auxiliaries be urged to make possible the attendance of their President or President-elect, by payment of all or part of their expenses.

The Chairman of Organization exhibited an Auxiliary book; a similar one was recommended for each of the States. It contained first a map of the State, then everything of interest pertaining to the Auxiliary in that State. In her report she showed thirty-seven States organized. She said women should be urged to join these organizations. If any one wished to join the Auxiliary and there was no Auxiliary near, she should be asked to become a member at large. She asked that before sending in reports, the Secretary's and Treasurer's report be compared, as there have often been discrepancies between the two. She asked that there might be sent in lists of names arranged alphabetically and made out properly—"Mrs. John Smith" as recorded in the American Medical Association, not "Mrs. Mary Smith." A request was made that names of officers of the last election of State Auxiliaries be sent to the Secretary of the A. M. A. She stressed answering letters promptly, especially every woman accepting office in the organization. She said "do work assigned to you even though you don't clearly see the purpose of it. Remember that a crazy quilt is a work of art."

The report of the President, Mrs. George M. Hoxie, was most inspirational. She told us that the Woman's Auxiliary must no longer organize to be organized, but it must organize only for a purpose. She urged that it be not organized in States where the State Medical Society is not interested in it.

She said that security is found in close cooperation between National Committee Chairmen and State Committee Chairmen, and between State Committee Chairmen and County Committee Chairmen. This implies no idea, she said, of National Chairmen dictating to State Chairmen or State Chairmen dictating to County Chairmen.

She requested that interesting experiments in every Auxiliary be passed on to other Auxiliaries so that finally the circulation might be complete. She reminded us that the National Council is the

clearing house of ideas, and in the National Council defects are corrected.

She spoke of help suggestions being prepared for all Chairmen, so that what they may do upon taking office would be available upon call for any one who might ask.

She earnestly stressed Education, Self-Education, Education of the public, the Study Program and the distribution of Study Envelopes to County Auxiliaries.

Regarding Education, the following resolutions were passed:

WHEREAS, The Study Envelopes have been enthusiastically commended by the Advisory Council of the A. M. A., and

WHEREAS, Those State Auxiliaries which have used them have found them of great value;

BE IT RESOLVED, That their use be continued, and that all State and County Auxiliaries be urged to appoint Study Program Chairmen, and that these Chairmen get in touch immediately with all Presidents and Presidents-elect of State and County Auxiliaries in order to secure the full advantage of their use as program material.

WHEREAS, The Auxiliary Primer issued by the Medical Society of the State of New Jersey, is the most comprehensive presentation of the aims and objectives of this organization, containing as well quotations from eminent members of both the Medical Society and the Woman's Auxiliary, regarding the need for a Woman's organization.

BE IT RESOLVED, That the wide use and distribution of the Primer be strongly recommended throughout our entire membership.

Mrs. Hoxie also urged that space be given to the Woman's Auxiliary in the Medical Journals.

The Press and Publicity Committee reported that the State Medical Journal editors showed remarkable interest in the Auxiliary by their eagerness for Auxiliary members to become famliar with Public Health Education in its latest phases in order that they may give other women's groups accurate interpretation of the views of the Medical Society on Health and Medical practice. (A doctor should be on each Board of Editors in each State.) Of the thirty-two State Medical Journals published, only eighteen carry Woman Auxiliary notes.

The President urged each State to have a Chairman of Education Program.

All Presidents and Presidents-elect pledged themselves to accept the recommendations of Mrs. E. V. DePew, Chairman of the Committee on Education Program, as follows:

I. That the Study Envelopes be continued.

II That Study Program Chairmen contact with Presidents-elect (or new Presidents) of each county.

Then followed a discussion of Health Education Work. States which had done the following types of work discussed their methods and results:

I. SELF-EDUCATION (Education of own members).
   (a) By Study Programs worked out by the State Auxiliaries for the use of County Auxiliaries.
   (b) By Study Programs worked out by the individual county for its own use.
   (c) By use of Study Envelopes provided by the National Auxiliary.

II. EDUCATION OF THE PUBLIC (by Auxiliary members working through other women's organizations).
   (a) By Study Programs.
   (b) By Educational addresses.
   (c) By Educational films.

III. COOPERATION WITH STATE AND LOCAL HEALTH AGENCIES IN HEALTH EDUCATION WORK.

IV. IMPROVEMENT OF HEALTH EDUCATION IN THE PUBLIC SCHOOLS.
   (a) By better education of teachers.
   (b) By the increased use of Hygeia.

V. STUDENT LOAN FUNDS.

A report of the various phases of work in the Auxiliaries was given:

The Student Loan Fund of Arkansas assisted six students through medical school.

Mrs. Walter Freeman, of Pennsylvania, reported County Health Work under the direct guidance of the State Health Department, emphasizing among other things, periodic health examinations, and clean water supplies. She said the most common defect in pre-school children's work is with the teeth, diphtheria prevention, and nutrition. She suggested giving the name and address of the proper physician and nurse to those who need attention, otherwise many do not know to whom to go. Many know nothing of dentists. Persuade parents to have teeth attended to. See how you can gather up the children from the corners of the town. She told the Auxiliary that Preventive Health work does not take bread from the family of the physician.

In North Dakota the Board of Health asked for an Auxiliary.

Cooperation of the State Auxiliary with the Minnesota Public Health Association, in the fight against Tuberculosis, was reported. The Board of Health there says it could not get along without the Auxiliary.

In Missouri, Study Envelopes on Prevention of Physical Defects have been placed with 800 Parent-Teacher Associations.

In one county in Missouri a Public Health nurse, trained in Educational methods, was employed to work in the rural schools, teaching the teachers how to teach Health. The nurse found in one classroom forty pupils, with the room unventilated and the teacher with a well developed case of tuberculosis, and a boy in the room with pneumonia. The nurse had the room closed.

Warren County, Miss., reported as one of its projects a Study Course in National, State and County Health Laws and the Study Envelopes sent out by the National Auxiliary.

One county reported giving $500.00 to the doctor's library for the purpose of having books rebound.

Mrs. Bunce, Chairman of the Committee on Press and Publicity, in her erport, said that there should be printed in the Medical Journals, with the other men's committees, a list of the names of the doctors serving on the Advisory Board. She called attention to the fact that not one Journal has at present this information printed. She urged the reading of the Journals by members of the Auxiliary, that we might make the medical problems ours, and be able to discuss intelligently the medical problems in clubs, where a physician's wife should be on every board. In regard to this, the following resolution was passed:

WHEREAS, Parent-Teacher Associations, Federated Clubs, the League of Women Voters, and the Auxiliary to the American Legion and other similar organizations are influential in their various civic and educational capacities.

BE IT RESOLVED, That the Auxiliary to the American Medical Association urge upon its component State Auxiliaries the advisability of participation

XUM

through individual membership in the various activities of the aforementioned organizations, with a special view (1) to the promotion of their health programs, and (2) to the cooperation in the Public Health projects of their Boards of Health.

The excellent report of Mrs. A. B. McGlothlan, Chairman of the Committee on *Hygeia*, showed much activity on the part of that committee. She reported 7,500 paid circulation to date, with 8,500 actual circulation to date.

Hygeia is the best Health Magazine published, it being the official health organ of the American Medical Association.

A resolution was passed that the *Hygeia* Committee be instructed to leave to the discretion of local Auxiliaries the advisability of soliciting individual subscriptions, but that we continue to push *Hygeia* as an instrument of Health Education by realizing funds from benefit entertainments or otherwise and by applying those funds to the purchase of subscriptions to be presented to teachers, libraries, legislators, and other groups, and that we continue to acquaint other women's organizations, leaders of youth, superintendents of schools, etc., with the magazine.

It was suggested that articles of specific interest be marked and submitted to the leaders of these organizations.

Mrs. Hoxie said that it was time the State Auxiliaries got on the program with the Board of Health. She suggested going to the Board of Health and asking how we might be of use, instead of telling them what to do.

One of the outstanding addresses of the Convention was that of Dr. Chas. H. Mayo. He, too, emphasized the need of Public Health Education. He spoke of the opportunity afforded the Auxiliary to render valuable aid to the profession by properly presenting its aims and accomplishments. He said education depended more upon women than upon men in a community. He advocated as of greater importance, the education of children rather than of the adult. Then he said, "The only way any of us can pay for our education is by passing it on to someone else." He added, "give back to the world more than you have received from it in education . . . but Auxiliary members must first correctly inform themselves before attempting to teach others."

The General Business Meeting closed with the election of the following officers for the year 1930-1931:

President—Mrs. J. Newton Hunsberger, Norristown, Pa.

President-elect—Mrs. A. B. McGlothlan, St. Joseph, Mo.

Vice-Presidents—Mrs. Southgate Leigh, Norfolk, Va.; Mrs. Jas. W. Blake, Hopkins, Minn.; Mrs. C. W. Mrs. Jas. W. Blake, Hopkins, Minn.; Mrs. C. W. Garrison, Little Rock, Ark.; Mrs. Jas. F. Percy, Los Angeles, Cal.

Treasurer—Mrs. Fred L. Adair, Chicago, Ill. (*Re-elected*).

Recording Secretary—Mrs. A. T. McCormack, Louisville, Ky. (*Re-elected*).

Corresponding Secretary—Mrs. H. C. Podall, Norristown, Pa.

Directors for one year—Mrs. Geo. H. Hoxie, Kansas City, Mo.; Mrs. Allen M. Bunce, Atlanta, Ga.; Mrs. Chas. E. Sears, Portland, Ore.; Mrs. G. Henry Mundt, Chicago, Ill.

Directors for two years—Mrs. Basil L. Connelly, Detroit, Mich.; Mrs. Ephriam R. Mulford, Burlington, N. J.; Mrs. Frank W. Cregor, Indianapolis, Ind.

Historian—Mrs. S. G. Red, Houston, Tex.

Following the installation of the 1930-1931 President, a Post-Convention Board meeting was held, Mrs. Hunsberger presiding.

In telling you about the social side of the Convention, I am taking the liberty of quoting Mrs. A. T. McCormack, from her excellent and concise account of it as given in the August number of the *Kentucky Medical Journal:*

"The entertainment and social program provided wide variety, including tea parties, boat rides, sightseeing trips, a theatre party, health programs of interpretative dancing, held in the beautiful auditorium of the New Art Museum. Outstanding perhaps, was the annual dinner of the Medical War Veterans, at which Dr Aristides Agramonte, of Cuba, the sole surviving member of the famous Yellow Fever Trio—Carroll, Reed, Agramonte—told the dramatic story of the discovery that mosquitoes carry yellow fever. Another delightful occasion was the reception of Mrs. Henry Ford, in her rose garden at her home in Dearborn. Concluding the festivities, was the President's ball, held at the Statler Hotel."

Next year the American Medical Association and its Auxiliary will meet in Philadelphia.

Respectfully submitted,

(Mrs. R. U.) Gertrude W. Burges,
Delegate to the Woman's Auxiliary, to the Amer. Med. Assn. from Virginia.

Proceedings of Societies

List of Members of Standing and Special Committees of the Medical Society of Virginia.

Standing Committees

Note: Figures after names in Standing Committees indicate length of term of office. Each year one new member is named on each standing committee by the in-coming president, for a term of three years.

Scientific Work and Clinics: Dr. C. Bruce Morton, University, *chairman* (3); Dr. J. S. Horsley, Jr., Richmond, (1); Dr. J. B. Nicholls, Catawba Sanatorium, (2).

Legislation and Public Health: Dr. A. L. Gray, Richmond, *chairman*, (2); Dr. E. G. Williams, Richmond, (1); Dr. John W. Robertson, Cnancock, (3).

Publication and Program: Dr. Alex. G. Brown, Richmond, *chairman* (1); Dr. John H. Neff, University (2); Dr. R. L. Payne, Norfolk (3).

Medical Economics: Dr. John O. Boyd, Roanoke, *chairman* (1); Dr. Malcolm H Harris, West Point (2); Dr. Ernest G. Scott, Lynchburg (3).

Medical Education and Hospitals: Dr. J. W. Preston, Roanoke, *chairman* (1); Dr. P. St. L. Moncure, Norfolk (2); Dr. W. O. Bailey, Leesburg (3).

Membership: Dr. J. A. White, Richmond, *chairman* (1); Dr. Isaac Peirce, Tazewell, (2); Dr. A. W. Hammond, Amsterdam* (3).

Ethics and Judiciary: Dr. James K. Hall, Richmond, *chairman* (1); Dr. J. Coleman Motley, Abingdon (2); Dr. Joel Crawford, Yale (3).

---

*Dr. Hammond was appointed to fill vacancy caused by death of Dr. C. F. Rinker.

SPDCIAL COMMITTEES

Walter Reed Commission: Dr. E. C. S. Taliaferro, Norfolk, *chairman;* Drs. Clarence Porter Jones, Newport News; Greer Baughman, Richmond; H. S. Hedges, Charlottesville; James D. Clements, Ordinary.

Maternal Welfare: Dr. Greer Baughman, Richmond, *chairman;* Drs. P. W. Miles, Danville; C. B. Bowyer, Stonega; Ruth Mason, Petersburg; F. Bayard Carter, University.

Library: Dr. Stuart McGuire, Richmond, *chairman;* Drs. Frank Hancock, Norfolk; R. M. Wiley, Salem.

History of Medicine in Virginia: Dr. Wyndham B. Blanton, Richmond, *chairman;* Drs. B. R. Tucker, Richmond; F. C. Rinker, Norfolk.

Child Welfare: Dr. W. P. Jackson, Roanoke, *chairman;* Drs. Percy Harris, Scottsville; R. T. Hawks, Carson; J. H. Hiden, Pungoteague; A. T. Finch, Chase City.

For Regulation of Training of X-Ray and Clinical Laboratory Technicians: Dr. Wright Clarkson, Petersburg, *chairman;* Drs. J. T. McKinney, Roanoke; E. L. Kendig, Victoria; Charles Phillips, Richmond; Oscar Swineford, Jr., University.

Department of Clinical Education: Dr. I. C. Harrison, Danville, *chairman;* Mr. George W. Eutsler, University, executive secretary; Drs. E. G. Williams, Richmond; L. T. Royster, University; Manfred Call, Richmond; Walter B. Martin, Norfolk; C. B. Bowyer, Stonega; and its *Advisory Board,* composed of the members of the Committee on Scientific Work and Clinics and the Committee on Medical Education and Hospitals.

Group Societies: Dr. Charles R. Grandy, Norfolk, *chairman;* Drs. E. C. S. Taliaferro, Norfolk; G. R. Joyner, Suffolk.

Public Relation—State and County: Dr. G. F. Simpson, Purcellville, *chairman;* Drs. Southgate Leigh, Norfolk; Alex. F. Robertson, Jr., Staunton; Wade C. Payne, Haymarket; J. Bolling Jones, Petersburg.

Military Affairs and National Defense: Dr. W. A. Brumfield, Farmville, *chairman;* Drs. G. A. L. Kolmer, Salem; Nelson Mercer, Richmond.

Tuberculosis Clinics: Dr. C. Lydon Harrell, Norfolk, *chairman;* Drs. W. P. Gilmer, Clifton Forge; R. L. Page, Batesville; George H. Steuart, Ottoman; W. W. Wilkinson, La Crosse.

Mental Hygiene: Dr Frank H. Redwood, Norfolk, *chairman;* Drs. James H. Royster, Richmond; A. M. Showalter, Christiansburg.

For Administering Trust Fund for Post-Graduate Clinical Education. (This to be composed of last five living ex-presidents): Drs. W. L. Harris, Norfolk; J. Shelton Horsley, Richmond; J. W. Preston, Roanoke; J. Bolling Jones, Petersburg; Charles R. Grandy, Norfolk.

Advisory Board to Woman's Auxiliary: Dr. Southgate Leigh, Norfolk, *chairman;* Drs. J. W. Preston, Roanoke; Lawrence T. Price, Richmond.

Clinical Meeting.

The South Piedmont Medical Society met in Danville, Va., November 25th, for the fifty-first stated meeting. Dr. Don Peters, President, of Lynchburg, presided. The program which follows was highly enjoyed and lasted from 3:00 P. M. until 10:00, with an hour's intermission for dinner.

The subject of the symposium was "Diseases of the Ductless Glands." Those taking part were as follows:

"Pediatric Aspect of Diseases of the Ductless Glands"—Dr. Samuel Newman, Danville, Va.

"Medical Aspect of Diseases of the Ductless Glands"—Dr. D. P. Scott, Lynchburg, Va.

"Surgical Aspect of Diseases of the Ductless Glands."—Dr. John T. Daves, Danville, Va.

"Treatment of Hay Fever"—Dr. W. E. Jennings, Danville, Va.

"Report of Case of Coronary Thrombosis With Autopsy"—Dr. E. G. Scott, Lynchburg, Va.

"Treatment of Carcinoma of the Cervix"—Dr. William Neill, *invited guest,* Baltimore, Md.

"Infant Mortality in Lynchburg"—Mosby G. Perrow, Ph. D., and F. O. Plunkett, M. D., Lynchburg, Va.

"Prenatal Care"—Dr. Bayard Carter, *invited guest,* University of Virginia.

"Conditions for Removal of Diseased Tonsils"—Dr. James R. Gorman, Lynchburg, Va.

"Whitman's Reconstruction Operation on the Hip"—Dr. Thomas Wheeldon, *honorary member,* Richmond, Va.

"Intravenous Use of Glucose"—Dr. L. O. Crumpler, Danville, Va.

The attendance at the meeting was between seventy-five and eighty. Most of these remained throughout the evening and listened to all the papers, many taking part in these discussions. There was a large delegation of visitors from Richmond, as well as the usual number from Lynchburg, South Boston, Farmville and the counties of Pittsylvania, Charlotte and Halifax.

The address of Dr. William Neill, of the Kelly Burnham Institute, Baltimore, on the "Treatment of Carcinoma of the Cervix" was greatly enjoyed. The Society passed a resolution thanking Dr. Neill for his instructive paper and expressed the wish that he would furnish a copy for publication in the VIRGINIA MEDICAL MONTHLY.

Preceding the meeting, at 2:00 P. M., in the rooms of the City Health Department Dr. Bayard Carter, Professor of Obstretrics, University of Virginia, held a clinic on "Prenatal Care" to which all members of the Society were invited. Dr. Carter's lecture and demonstrations were very instructive and proved one of the most attractive features of the meeting. Dr. R. W. Garnett had kindly provided for the clinic a half dozen cases in various stages of pregnancy. Dr. Carter's lecture and clinic was in connection with the Department of Clinical Education of the Medical Society of Virginia.

The wish was expressed by many of those present that Dr. Carter may be induced to

deliver this lecture and hold a similar clinic in other sections of this District.

I. C. H.

The Northern Neck Medical Association,

Composed of the counties of Northumberland, Lancaster, Richmond, and Westmoreland, met in regular semi-annual meeting at Montross, Va., October 30th, with Dr. George H. Steuart, of Ottoman, as president. After reading of the minutes, the following officers were elected for the ensuing year: President, Dr. E. T. Ames, Montross; vice-presidents, Drs. Samuel Downing, Newport News, and W. B. Richardson, Heathsville; secretary-treasurer, Dr. R. E. Booker, Lottsburg.

Instructive papers, presented by Drs. E. T. Ames, Montross; W. B. Richardson, Heathsville; M. C. Oldham, Lancaster; and Drs. T. N. Barnett and James H. Smith, both of Richmond, were freely discussed. Dr. R. O. Lyell, a former secretary of the Society but now living in Miami, Fla., was present and gave an interesting talk. In addition to the members, there were present a number of visiting doctors from Richmond, Washington, and Fredericksburg. A delightful banquet was served at Walker's Hotel at 7 P. M.

The next regular meeting will be held at Heathsville, Va., on the fourth Thusday in May, 1931.

The Lynchburg and Campbell County Medical Society,

At its annual meeting, elected the following officers for the coming year: President, Dr. Don Preston Peters; vice-president, Dr. D. P. Scott; and secretary-treasurer, Dr. Ernest G. Scott, all of Lynchburg.

During the coming year, this Society plans to have several out-of-town men address them and will also have interesting cases presented by their members.

The Post-Graduate Medical Society of Southern Virginia

Will hold its next meeting at Hopewell, Va., January 13th, in conjunction with the Department of Clinical Education of the Medical Society of Virginia. At this time there will be a symposium on "Allergy." Drs. Warren T. Vaughan, Richmond, Edward Alexander, Newport News, Meade Edmunds, Petersburg, and Oscar Swineford, Jr,. University, will take part in this symposium. Mr. Edward Hawke, a medical student at the University, is also expected to present a paper on "Angioneurotic Edema."

Dr. Joel Crawford, Yale, is president of this society, and Dr. Philip Jacobson, Petersburg, is secretary.

Richmond (Va.) Academy of Medicine.

At the annual meeting of the Academy, early in December, Dr. J. Morrison Hutcheson, was elected president for the coming year, and Dr. Mark W. Peyser was re-elected secretary-treasurer. Drs. A. S. Brinkley and Charles M. Caravati were elected vice-presidents.

At this meeting, Dr. Stewart Roberts, of Atlanta, Ga., professor of Medicine at Emory University, read a paper on "Thyroid Heart" and Dr. J. Shelton Horsley, Richmond, presented a paper on "Cancer."

The Southside Virginia Medical Association

Held its annual meeting in the new Medical Arts Building, Petersburg, Va., December 9th, under the presidency of Dr. J. A. Grizzard, of Drewryville. There was a good attendance and an interesting and instructive program was rendered. All papers read were freely discussed.

After a delightful dinner by the Petersburg doctors, Dr. J. Allison Hodges, President of the Medical Society of Virginia, by invitation, gave a very interesting talk, outlining some of the future activities proposed throughout the State, by the Department of Clinical Education.

The following officers were elected for 1931: President, Dr. Ruth Mason, Petersburg; vice-presidents, Dr. G. Richardson Joyner, Suffolk; Dr. M. H. Tredway, Emporia; Dr. Linwood Farley, Courtland; and Dr. Herbert C. Jones, Petersburg; secretary-treasurer, Dr. R. L. Raiford (re-elected), Franklin. The next meeting will be held in Hopewell on the second Tuesday in March.

The Pulaski County Academy of Medicine,

At its annual meeting held at the Pulaski Hospital, Pulaski, Va., early in December, elected Dr. D. S. Divers of that city president. Other officers elected for the ensuing term are: Dr. J. B. Millard, Draper, vice-president; Dr. R. F. Thornhill, Pulaski, treasurer; and Dr. C. E. Bowles, Pulaski, secretary.

Petersburg Medical Faculty.

Dr. Mason Romaine was elected president of the Petersburg, Va., Medical Faculty, at its meeting held early in December; Drs.

Meade Edmunds and C. T. Jones were elected vice-presidents; Dr. Wilbur M. Bowman, secretary-treasurer; and Dr. Leta White corresponding secretary.

The following committees were appointed by Dr. Romaine: *Court Medicale*, Drs. Joseph D. Osborne, L. S. Early, W. Preston Hoy, E. L. McGill, and George H. Reese; *Paper Committee*, Drs. Wright Clarkson, Herbert C. Jones and E. W. Young; *Supper Committee*, Drs. Leta White, C. W. Lynn and W. A. Reese; *Entertainment Committee for the Southside Medical Association*, Drs. Wm. B. McIlwaine, Ruth Mason, and D. D. Willcox.

The Truth About Medicine

In addition to the articles enumerated in our letter of October 24th the following have been accepted:

Abbott Laboratories.
Gold Sodium Thiosulphate—Abbott.

Eli Lilly & Co.
Erysipelas Antistreptococcic Serum—Lilly (Concentrated Globulin).

Medical Arts Laboratory, Inc.
Antirabic Vaccine, Semple Method.

National Drug Co.
Antipneumococcic Serum, Type I.
Ointment Scarlet Red Biebrich 8 per cent.
Typhoid-Paratyphoid A Vaccine.

Parke, Davis & Co.
Ventriculin.

Richards Pharmacal Co., Inc.
Richards Psyllium Seed.

E. R. Squibb & Sons.
Diphtheria Toxoid—Squibb, twenty 1 c.c. ampule packages.
Diphtheria Toxoid—Squibb, two 1 c c. ampule packages.
Normal Horse Serum, one 50 c.c. vial package.
Ragweed Pollen Allergen Solution—Squibb (3 vial treatment package).
Timothy Pollen Allergen Solution—Squibb (3 vial treatment package).

NEW AND NONOFFICIAL REMEDIES

The following products have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in New and Nonofficial Remedies:

McKesson's Vitamin Concentrate of Cod-Liver Oil.—A cod-liver oil concentrate having not less than eleven times the minimum vitamin A potency of cod-liver oil, U. S. P., and not less than eleven times the vitamin D potency of a potent cod-liver oil used as a standard. The product possesses properties similar to those of cod-liver oil so far as these depend on the fat soluble vitamin content of the latter. McKesson and Robbins, Inc., Bridgeport, Conn. (Jour. A. M. A, November 1, 1930, p. 1347.)

Maltine with Cod-Liver Oil and Iron Iodide.—This product is composed of maltine, 70 per cent, cod-liver oil, 30 per cent, and ferrous iodide, 0.44 Gm. per hundred c.c. (2 grains to each fluid ounce.) Maltine is a preparation essentially similar to extract of malt, U. S. P., but it contains 3.88 per cent of alcohol, is prepared from malted barley, oats and wheat; its vitamin B_1 and B_2 content and its starch converting power is controlled by assay. Maltine with cod-liver oil and iron iodide contains in 100 c.c. from 23,000 to 25,000 vitamin A units as determined by the U. S. Pharmacopeia assay and its vitamin D potency is controlled by assay. Maltine Company, Brooklyn, N. Y.

Diphtheria Toxoid.—A diphtheria toxoid (New and Nonofficial Remedies, 1930, p. 364) prepared from diphtheria toxin of which the L+ dose is 0.2 c.c. or less. The toxin is treated with formaldehyde and is tested for antigenic power. The finished product is adjusted to contain in 2 c.c. enough of the toxoid for one immunization treatment. It is marketed in packages of one immunization treatment. Lederle Laboratories, Inc., Pearl River, N. Y. (Jour. A. M. A., November 15, 1930, p. 1505.)

Ampoule Sterile Solution Dextrose, U. S. P., 5 Gm., 10 c.c.—Each ampule contains dextrose, U. S. P., 5 Gm., in distilled water to make 10 c.c. E. S. Miller Laboratories, Inc., Los Angeles.

Ampoule Sterile Solution Dextrose, U. S. P., 10 Gm., 20 c.c.—Each ampule contains dextrose, U. S. P., 10 Gm., in distilled water to make 20 c.c. E. S. Miller Laboratories, Inc., Los Angeles.

Ampoule Sterile Solution Dextrose, U. S. P., 25 Gm., 50 c.c.—Each ampule contains dextrose, U. S. P., 25 Gm., in distilled water to make 50 c.c. E. S. Miller Laboratories, Inc., Los Angeles.

Dextrose (d-Glucose) Unbuffered and Without Preservative, 10 Gm., 20 c.c. Ampul.—Each ampule contains dextrose, U. S. P., 10 Gm., in distilled water to make 20 c.c. H. K. Mulford Co., Philadelphia.

Dextrose (d-Glucose) Unbuffered and Without Preservative, 25 Gm. 50 c.c. Ampul.—Each ampule contains dextrose, U. S. P., 25 Gm., in distilled water to make 50 c.c.; accompanied by an ampule of 2 c.c. of a buffer solution. H. K. Mulford Co., Philadelphia.

Dextrose (d Glucose) Unbuffered and Without Preservative, 25 Gm., 50 c.c. Double End Vial.—Each double end vial contains dextrose, U. S. P., 25 Gm., in distilled water to make 50 c.c.; accompanied by an ampule of 2 c.c. of a buffer solution. H. K. Mulford Co, Philadelphia.

Dextrose (d-Glucose) Unbuffered and Without Preservative, 50 Gm., 100 c.c. Ampul.—Each ampule contains dextrose, U. S. P., 50 Gm., in distilled water to make 100 c.c.; accompanied by an ampule of 4 c.c. of a buffer solution. H. K. Mulford Co., Philadelphia.

Ventriculin—Desiccated, defatted, hog stomach.—It is assayed clinically by observation of the reticulocyte response, the standard being an increase of red blood cells at the rate of about one hundred thousand cells per cubic millimeter per week when the product is administered to patients suffering from pernicious anemia. Stomach tissue of animals has been shown to contain a principle capable of stimulating the bone marrow to form immature red cells in large numbers. When, during the first ten to fifteen days' treatment with ventriculin, a satisfactory rise in reticulocytes occurs, this is evidence that effective and progressive blood regeneration is taking place. Ventriculin is supplied in the form of a powder in vials containing 10 Gm. Parke, Davis & Co., Detroit. (Jour. A. M. A., November 22, 1930, p. 1589.)

PROPAGANDA FOR REFORM

Coffey-Humber Treatment for Cancer.—Recent developments in the Coffey-Humber treatment of cancer emphasize the fact that the history of investigations of new methods for the treatment of cancer is marked by the wreckage of dozens of scientific reputations, by the bodies of patients, and by bitter controversy among scientific men. Such conditions establish again the importance of provision within organized medi-

XUM

cine for careful study and judgment of new methods before they are given circulation to the medical profession or to the public. Had the proponents of the Coffey-Humber method seen fit from the first to follow established custom in the introduction of their technic and their results, had they consulted the Council on Pharmacy and Chemistry as to the proper method of introducing a new proprietary, they might have avoided all the acrimony, the criticism, and certainly all the notoriety that has been their lot. (Jour. A. M. A., November 1, 1930, p. 1349.)

Nonvolatile Substances as Anesthetics.—The Council on Pharmacy and Chemistry has accepted a barbital derivative for oral and rectal use as a preliminary to surgical anesthesia. Experimentally this product has also been administered intravenously but such use is far from safe and the manufacturer is not marketing the product for intravenous use. Now the Council publishes a preliminary report on Avertin, which substance has been proposed not only for initiating anesthesia, but also as the chief means of inducing unconsciousness, to be supplemented when necessary by a small amount of an inhalation or local anesthetic. The Council concludes that Avertin may prove valuable as a means of initiating narcosis, but that it is not proved to be a safe agent for complete narcosis, either by itself or combined with a volatile anesthetic. These two products illustrate a modern tendency in anesthetics. A paper by Lendle seems to show that neither Avertin nor the barbital derivative "Pernocton" is a satisfactory solution of the problem The products so far proposed for so-called basal anesthesia are hypnotics or sedatives and should be used as such. They cannot be safely used for complete anesthesia and can be safely used in combination with other agents for the production of complete anesthesia only by those thoroughly experienced in the administration of anesthetics and closely familiar with the studies of the use of nonvolatile agents for anesthesia. Thus far their intravenous use must be considered unsafe. (Jour. A. M. A., November 8, 1930, p. 1430).

Nature of the Substance in Liver Active in Pernicious Anemia.—The search for the "active principle" which renders liver potent in the treatment of pernicious anemia has resulted in the isolation of an active crystalline salt demonstrated to be clinically potent in pernicious anemia. It is a compound of beta-hydroxy-glutamic acid and hydroxyproline. Both of these substances possess the characters of protein derivatives; the mode of their linkage remains to be ascertained. (Jour. A. M. A., November 15, 1930, p 1509).

Book Announcements

Industrial Accidents to Men and Women. By EMILY C. BROWN. Bulletin of the Woman's Bureau, No. 81, U. S. Department of Labor. U. S. Government Printing Office. 1930. For sale by the Superintendent of Documents, Washington, D. C. Price, 15 cents.

Every year industrial accidents in the United States levy an appalling toll on wage earners and on industry Through this Bulletin, the Woman's Bureau discusses this subject with a compilation of data from State reports, by sex, from 1920 to 1927, with emphasis laid on the importance of separate accident statistics for men and women. Only twenty-one states published any accident figures by sex, during the period studied, and only seven of these published a series through the eight years. Many interesting facts are brought out in this report.

Forty-Sixth Annual Report of the Bureau of American Ethnology. To the Secretary of the Smithsonian Institution. 1928-1929. United States Government Printing Office. Washington. 1930. 654 pages. Illustrated. For sale by the Superintendent of Documents, Washington, D. C. Price, $1.90. Paper.

Methods and Problems of Medical Education. Eighteenth Series. The Rockefeller Foundation. New York. 1930. 329 pages. Illustrated. Paper.

Operative Gynecology. By HARRY STURGEON CROSSEN, M. D., F. A. C. S., Professor of Clinical Gynecology, Washington University School of Medicine and Gynecologist in Chief to the Barnes Hospital and the Washington University Dispensary, etc., and ROBERT JAMES CROSSEN, M. D., Instructor in Clinical Gynecology and Obstetrics, George Washington University School of Medicine; Assistant Gynecologist and Obstetrician to the Barnes Hospital and the St. Louis Maternity Hospital. Fourth Edition. St. Louis. The C. V. Mosby Company. 1930. Octavo of 1,078 pages. Twelve hundred forty-six illustrations and two color plates. Cloth. Price, $15.00.

Medical Jurisprudence. A Statement of the Law of Forensic Medicine. By ELMER D. BROTHERS, B. S., LL. B., Member of the Chicago Bar; Lecturer Emeritus on Jurisprudence in the Medical and Dental Departments of the University of Illinois and Lecturer on Medical and Dental Jurisprudence in John Marshall Law School and on Historical Development of the Federal Constitution. Third Edition. St. Louis. The C. V. Mosby Company. 1930. Octavo of 309 Pages. Cloth. Price, $3.50.

Physical Diagnosis. By WARREN P. ELMER, B. S., M. D., Associate Professor of Clinical Medicine, Washington University, School of Medicine; Assistant Physician to Barnes Hospital, etc. And W. D. ROSE, M. D., Late Associate Professor of Medicine in the University of Arkansas. St. Louis. The C. V. Mosby Company. 1930. Octavo of 903 pages. With three hundred thirty-seven illustrations. Cloth. Price, $10.00.

A Manual of Normal Physical Signs. By WYNDHAM B. BLANTON, B. A., M. A., M. D., Assistant Professor in Medicine, Medical College of Virginia. Second Edition. St. Louis. The C. V. Mosby Company. 1930. 12mo. of 246 pages. Illustrated. Cloth. Price, $3.00.

A Compend on Bacteriology. Including Pathogenic Protozoa. By ROBERT L. PITFIELD, M. D., Attending Physician, Germantown Hospital, Philadelphia. And HOWARD W. SCHAFFER, M. D., Pathologist to the Memorial Hospital, Philadelphia; assistant in Dermatological Research, University of Pennsylvania. Fifth Edition. Philadelphia. P. Blakiston's Son & Co., Inc. 12mo. of 317 pages. With 4 plates and 82 other illustrations. Cloth. Price, $2.00 net.

Virginia Medical Monthly

FOUNDED BY LANDON B. EDWARDS, M. D., APRIL, 1871.
OWNED BY THE MEDICAL SOCIETY OF VIRGINIA.
PUBLISHED BY THE PUBLISHING COMMITTEE.

A. G. BROWN, JR., M. D., Chairman and Editor, Richmond, Va.

R. L. PAYNE, M. D., Norfolk, Va.
J. H. NEFF, M. D., University, Va.

AGNES V. EDWARDS, Business Manager and Secretary-Treasurer.

All correspondence regarding editorial matters, articles, advertisements, subscription rates, etc., should be addressed to the Monthly, 104½ West Grace Street, Richmond, Va.

All advertisements are received subject to the approval of the Council on Pharmacy and Chemistry of the American Medical Association.

Subscription Price: $2.00 per annum in advance.
Single Copies 20c.

VOL. 57. JANUARY No. 10.

Editorial

Keeping-in-Touch With the Clinical Pathologist.

Some one has recently asked the question: what is a clinical pathologist? It has been answered by saying that a clinical pathologist is a physician who devotes all or a major portion of his time to diagnosis of disease by laboratory methods.

More and more practitioners need to keep in touch with the clinical pathologist. This is not to affirm, however, that diagnosis must be left to the laboratory. Much to the contrary is the fact. One of the great needs of the day is for the working clinician in the field to cultivate his powers of observation and of memory in order to keep alive the powers of discernment at the bedside. One of the urgent needs, to repeat, is for the doctor in general practice to conduct for himself a school of clinical study on the cases that come to his hands each day. Let the practitioner of today ponder and study gross and clinical signs of disease as it presents itself to him daily in his work. Let him take his cases home with him every night and in his library among his books go over the anatomy and pathology and physiology that may be involved. Let him read the history of the disease; let him trace its evolution through the decades and years of the past. Let him return to the bedside and study anew the symptoms and the physical signs. Let him acquaint himself with the prognosis and the statistical experience of authorized writers on the subject. And, withal, a survey of treatment of such cases may be wisely studied. In other words, let the practitioner return to his books and his library with his physical findings and then return to the patient and search for more. Let the practitioner use his stethoscope, his hands, his eyes, his ears, his watch, and his "common sense" in his self-improvement as he endeavors to diagnose disease and treat his patients. And finally, let the busy and hurried practitioner take time to get and record an accurate story of the course of events in the sickness or illness under study. The writing of the history is in itself a source of self-culture in the art of medical efficiency.

In advocating keeping in touch with the clinical pathologist, then, one should not let up in any sense a daily effort at self-improvement at the bedside in the study of clinical medicine—quite the contrary.

But the clinical pathologist in the laboratory has much to offer that is beyond the domain of clinical observation. The clinical pathologist is a histologist and a microscopist, having knowledge and technique in serology, in bacteriology and pathology. All of these scientific fields of knowledge, under certain conditions and experiences, may be employed in the development of diagnosis and treatment of disease. In the capacity of a consultant, or referee, in the position of adviser, or in the domain of adviser in the treatment, the laboratory worker may be employed. Laboratory methods of study in disease are frequently required in practice of medicine. One may consult the pathologist regarding new trends of disease in order to keep an up-to-date perspective on the problems of daily practice. The literature of the laboratory worker and the current reading of the clinical pathologist may enable the practitioner to get from the laboratory world a point of view that may be otherwise closed to him. Every practitioner, in order to carry on his work with any degree of satisfaction and responsibility should have more or less a touch with a laboratory and clinical pathologist.

Medicine can advance to higher levels of efficiency only as practitioners the country-over, and through the years, keep alive a large mental grasp of disease in the light of research and newer knowledge. This mental grasp of problems of disease cannot be gotten with a dull mind but can best be obtained by

persistent post-graduate study and by keeping the mind alive with the trends of medical progress. An appreciation of the pathology with which physicians have to deal can only come in its best form when the mind of the practitioner is keenly alive as a result of wholesome and regular study of the fundamentals of medicine. Much that practitioners mulled through during the over-filled four years at the medical school, which may have been ten to fifteen or twenty years in the past, has become largely a dimmed memory. This is only a reasonable condition. It is known to be beyond the powers of human memory to store away in any elaborate detail the thousandfold facts packed into the course of medical study while at medical college.

In contact with an active clinical laboratorist, a judicious selection of attendance upon medical society sessions; hours spent alone in one's library with his own clinical cases, records and histories, laid-down by the side of a review of the disease in medical texts and in accumulated files of current medical literature, offer the graduate—the medical practitioner—a good working plan for the conduct of practice of medicine.

Cardio-Vascular Syphilis.

At no point in the anatomy of the human does the spirochaeta pallida strike and wreak destructive pathology with a more certain and death-dealing effect than in the great heart outlet: the aorta. In cerebrospinal syphilis, it is true, dreadful and lamentable symptomatology occurs. Paresis drags its course through years of madness and paralytic life. The brain and spinal cord under the sinuous inroads of the spirochaeta pallida misbehave and undergo destructive changes. In the aortic valves-zone and the ascending aorta destructive changes break down the heart.

It is hardly worth while to make suggestions of comparative importance between the lesions of syphilis in the brain, spinal cord and those of the heart and the aorta. It is probably more to the point to emphasize that lesions of this nature in the heart and aorta should rank with lesions of the brain and spinal cord in importance as a disease-state, worthy of close and accurate study.

Every practitioner of experience in all probability recalls in practice and in hospital observations the lamentable and deadly display of symptomatology in cardio-vascular syphilis. It is well to observe that these symptoms may be in rare instances found in the early period of syphilis but it is usually the case that symptoms show clinically some ten to twenty years after the primary lesions of the disease. Observers remember what these symptoms are. Usually a complaint of dyspnoea or precordial pain or both in the man of middle life, associated with physical signs of aortic regurgitation, or other aortic defect, make a strong suggestion of syphilis of the heart and aorta. One must not forget also a group of syphilitics in whom aortic lesions are elicited on physical examination without other signs of the disease. Then there is the group with aneurysmal signs or dilatation of the aorta with signs of dyspnoea and pain. Practitioners naturally scout around, in the presence of an aortic regurgitation, for a history of the primary infection. One looks about in the general body for confirmatory evidences of syphilis elsewhere. One leans upon the Wassermann test or even one may not be sure and turn to specific or mixed treatment for final diagnostic decision.

Coombs* has recently called attention to this subject as it is related to general practice and comments upon the pathology in an interesting manner. As pointed out, the important lesion is that of aortitis. The process, he states, proceeds from without inwards. Infiltration, beginning in the peri-aortic connective tissue is characterized by massing of cells, mostly lymphocytes, filling lymph channels and piling up in dense layers, lining the outer aspect of the aortic wall. He observes that through this layer the vaso-vasorum passes. The walls of these small vessels swell, tending to close the channels. Lymphocytes invest and surround them as they penetrate the aortic medial coat. In the media there collect lymphocytes between laminae of elastic tissue. Later the laminae break down. Large spaces form within the aortic wall which become potential beginnings of the aneurysm. But beyond, the intima is thickened and hypertrophied. Now, this inflammatory invasion of the aortic wall spreads to the heart and is there checked; owing to the distribution of the lymph channels there. But in this sweeping around the root of the aorta, the spiro-

*British Medical Journal, November 29, 1930, page 893.

chaeta pallida lays its ominous pathology about the mouths of the coronary arteries and the commissural attachments, says the author, of the aortic semilunar cusps. Slowly but steadily the orifices of the coronaries fill with inflammatory infiltration. The aortic cusps contract and shrink under the deadly grasp of the increasing pathology. Soon the heart emits its sign of pain and dyspnoea.

Arteriosclerosis in Diabetes.

After all, in long-standing or chronic disease processes, the status of arteries plays an important part. In diabetes mellitus, Joslin has recently directed attention to this problem. As in all of Joslin's* studies of his own experiences in a large group of diabetics, his report is full of interesting observations bearing on the point under consideration. Arteriosclerosis takes a leading place as a cause of death in the diabetic, says Joslin. Every other diabetic, he notes, now dies of arteriosclerosis and he suggests that the percentage is rapidly increasing. Death by coma has heretofore stood out as the chief menace of the diabetic. Better control of this exigency of the diabetic life, probably, explains the increase of arterial disease as the cause of death.

Joslin cites his experience. His investigation of arteriosclerosis in diabetes rests upon his study of "all true diabetic cases" seen by him from 1894 to 1930, of which he has information in 97 per cent of the cases. With the aid of the Statistical Department of the Metropolitan Life Insurance Company, he has arranged the material.

As suggested, the fall in death from coma probably explains the increase in percentage of deaths by arteriosclerosis. In what he calls the "Naunyn Era" coma was the cause of death in 61 per cent of 781 cases of diabetes and in this era arteriosclerosis was the cause of death in 15 per cent; in the "Allen Era," arteriosclerosis was the cause of death in 26 per cent of cases; and in the first half of the insulin or "Banting Era," it was the cause of death in 41 per cent of cases; and in the last half (past four years) it was the cause of death in 50 per cent.

In escape from death by coma, in more accurate dietary management, in the use of insulin in diabetes, rest other explanations of the increase in the percentage of death by diseases of the arterial wall. In other words, the diabetic's life-line has been increased; he grows older. While it is true that as a rarity arteriosclerosis appears in the young, the condition connotes ageing and length of life in the main. It appears, therefore, that a consideration of the problem of preventing or delaying the advance of arterial disease in the diabetic is one which deserves investigation and study by the internist and general practitioner. Let us follow Joslin's line of study. The common sites of arteriosclerotic changes as shown by his study of all fatal cases showed that the most common location was in vessels of the heart, being 19.1 per cent of the total mortality; the next place in order of frequency was the vessels of the legs, being 13.2 per cent as shown by deaths from gangrene; the next site was in the brain arteries, being 7.2 per cent; and the least frequent vessels showing arteriosclerotic change causing death of diabetics, was in the kidney, being 4.7 per cent.

Practitioners may think, in the light of the foregoing findings, that diabetics, in so far as arteriosclerosis is concerned, show danger-signs, chiefly in the heart, lower extremities, and brain, and these changes occur in the given sites in point of frequency in the order given. It seemed obvious that the duration of diabetes increases the incidence of the arteriosclerosis. It was noted that there appeared to be a higher rate of incidence in the Jewish race. He found that arteriosclerosis occurred in youth and the early middle-aged. Even in children, arteriosclerosis was observed as a complication.

It appears, then, that diabetics who escape coma are threatened by arteriosclerosis which localizes in heart vessels, vessels of the feet and legs and the vessels of the brain. Thus management of diabetes must advance to a great refinement, with a view to a more careful study of the metabolites of the blood of the diabetic as the patient goes on with insulin treatment.

*Joslin. **Annals of Internal Medicine**, July, 1930, page 29.

News Notes

Probability of Mental Disease.

The New York State Department of Health has worked out figures, by careful statistical methods, giving the probability of mental disease for the population of the State of New

York. New York has a population of over 12,600,000. Of this number, about 560,000 will probably develop severe mental disease and become patients in hospitals for the insane during some period of their lives. Of the people now living in New York City over 300,000 will need hospital treatment for mental ills. In the State as a whole, 45 of every 1,000 children born will probably be afflicted with mental disease at some period of life. It has also been found that the rate of expectancy of mental disease is higher among men than among women; higher among city people than among country people and higher among the foreign-born than among the native population.

If interested in the prevention of mental disease, write to the State Department of Mental Hygiene, State Office Building, Albany, N. Y., and information on the subject will be sent to you.

Medical College of Virginia News.

Dr. Stewart R. Roberts, professor Clinical Medicine at Emory University, School of Medicine, Atlanta, Ga., was a visitor at the Medical College of Virginia, Richmond, on December 10th. He spoke to the senior medical students on exophthalmic goiter and to the junior medical students on angina pectoris.

Dr. E. C. L. Miller, directing librarian at the Medical College of Virginia, Richmond, attended the annual meeting of the American Association for the Advancement of Science, held the week after Christmas, in Cleveland, and read a paper on the development of libraries in the several state academies of science. Dr. Miller went to the Cleveland meeting as a representaive both of the Virginia Academy of Science and of the Virginia chapter of the American Association of University Professors which assembled at the same time in that city.

Wives of students now attending the Medical College of Virginia, Richmond, were, in December, given a reception by the Woman's Auxiliary of the college, composed of more than forty members. The reception was held in the evening at Cabaniss Hall and was under the direction of a committee composed of Mrs. Harry Lyons, Mrs. C. W. Skinner, Mrs. F. W. Shaw, Mrs. Harry Bear, and Miss Lulu K. Wolf. There are more than fifty married students at the college at this time.

The outpatient department of the Medical College of Virginia, Richmond, had 3,403 visits by patients during the month of November. The largest number of patients for one day was 225, the smallest 86.

The appropriation of the Richmond Community Fund for the outpatient department during 1931 has been fixed at $10,000 toward a budget of approximately $40,000.

A bequest of $2,000 with accrued interest of approximately $1,000 has been received recently by the college hospitals.

"Progress in Health Services" was the subject of Dr. William John Gies, professor of biological chemistry at the College of Physicians and Surgeons, Columbia University, when he was the chief founder's day speaker at the Medical College of Virginia, Richmond, December 1st, on the ninety-third anniversary of the institution.

Married.

Dr. Charles P. M. Sheffey, Lynchburg, Va., and Miss Mae Joy Burch, of Richmond, Va., a graduate nurse of Memorial Hospital, this city, December 31st.

Dr. Donald Bain Moore, Badin, N. C., and Miss Emmie Anderson Brown, Albemarle, N. C., October 17th. Dr. Moore is an alumnus of the former University College of Medicine, Richmond, Va.

Dr. Ellis Columbus Moore, Carthage, Miss., and Miss Catherine Preston Finney, Lexington, Va., in December. Dr. Moore graduated from the Medical Department of the University of Virginia in 1927.

Dr. Blake Walden Meador and Miss Ethel Marchant Hale, both of Richmond, Va., the latter part of December. Dr. Meador is an alumnus of the Medical College of Virginia, class of '27.

The Seaboard Medical Association of Virginia and North Carolina

Held its annual meeting at Elizabeth City, N. C., December 2nd-4th. There was a large attendance, including a number of the doctors' wives. Several papers of unusual interest were presented and discussed, and ample entertainment was afforded those who attended.

A feature of this meeting was a memorial service held for Drs. Cyrus Thompson and Charles O'H. Laughinghouse, with a eulogy

by Dr. H. D. Walker, president of the Association.

The following officers were elected for the ensuing year: President, Dr. James H. Culpepper, Norfolk, Va.; vice-presidents, Drs. C. B. Williams, Elizabeth City, N. C.; James E. Marable, Newport News, Va.; Paul H. Whitaker, Kinston, N. C.; and O. R. Yates, Suffolk, Va.; treasurer, Dr. A. M. Burfoot (re-elected), Fentress, Va.; and secretary, Dr. Clarence Porter Jones (re-elected), Newport News, Va. The next meeting is to be held at Suffolk, Va., December 1-3, 1931.

News From University of Virginia, Department of Medicine.

At the meeting of the University of Virginia Medical Society on November 24th, Dr. Alfred Chanutin spoke on Some Recent Advances in Biochemistry, and Dr. J. H. Neff spoke on Exposure of the Bladder as a Step Preliminary to Cystostomy and Prostatectomy.

Dr. L. T. Royster spoke before the Rockbridge County Medical Society in Harrisonburg on December 8th, on the subject of Malnutrition and Posture.

Dr. J. H. Neff read a paper by invitation before the New York Branch of the American Urological Association at the meeting on December 5th.

Dr. W. H. Goodwin attended the meetings of the Southern Surgical Society in Lexington, Ky., from December 9th to 12th.

Dr. H. B. Mulholland was elected President of the University of Virginia Medical Society for the coming year. Dr. E. L. Corey was re-elected Secretary. At the meeting of the Society on December 8th, Dr. J. E. Kindred presented a paper on Studies on the Blood of the Fetal Albino Rat, and Dr. F. B. Carter spoke on Blood Findings in Pregnancy.

A new contract has been drawn up for the cooperation of Albemarle County, the City of Charlottesville and the University of Virginia in a Joint Health Department. Under the terms of this contract a Joint Health Board is created consisting of five members, two from the County, two from the City, and one from the University, with full power to act in all matters pertaining to the public health in the city and county except with regard to appropriations and the promulgation of ordinances.

Arrangements have been completed for a study of the incidence, and the effect of mass treatment of syphilis in the colored population of Albemarle County. The study is a cooperative enterprise sponsored by the Rosenwald Fund through the U. S. Public Health Service, the State Board of Health, and the University. Surgeon C. E. Waller, of the U. S. P. H. S., has arrived in Charlottesville to organize the field work and has established headquarters in the Joint Health Department.

The Annual Report of the U. S. Public Service,

Covering the work of the Service during the past fiscal year, was recently submitted to Congress by Surgeon General H. S. Cumming. It states that one of the important public health duties of the Federal Government is the prevention of the introduction and spread of infectious diseases from foreign countries into the United States. In order properly to protect the United States against the introduction of infectious diseases, this Service keeps itself advised currently as to the prevalence of disease, not only in the United States but, in so far as practicable, throughout the world. In connection with this work, 20,645 vessels, 1,056,294 passengers, 1,380,241 seamen were inspected at domestic and insular ports and 1,211,796 alien passengers and 968,759 alien seamen were examined by medical officers under the immigration law.

Reports to the Public Health Service for the past fiscal year indicate generally good health conditions throughout the United States. However, there was noted an increase in the prevalence of pellagra and a marked increase in the number of cases of infantile paralysis in certain states just before the close of the fiscal year. The report also shows that for three years, at least, the incidence of smallpox in the United States has been increasing, this in spite of the fact that it may be avoided by vaccination and revaccination.

It is stated that although some progress is being made in the establishment of adequately and properly organized local health service, only about 25 per cent of the rural population of the United States is at present so provided, and it is the opinion of the Service, of State

health authorities, and other health workers that the development of efficient whole-time local health oragnizations will yield a far greater return on the dollar invested than many other programs.

During the year, many investigations relating to various public health problems have been conducted, and medical facilities were provided in 155 ports of continental United States and its insular and territorial possessions for hospital and out-patient treatment for seamen from merchant vessels and other legal beneficiaries of the Public Health Service.

By act of Congress, approved May 26, 1930, the name of the Hygienic Laboratory was changed to the National Institute of Health, and provisions were made for additional buildings, the establishment of fellowships, and the acceptance of gifts for the study of fundamental problems relating to the diseases of man.

During the year an act of Congress established a Division of Mental Hygiene in the Public Health Service and placed the supervising and furnishing of medical and psychiatric service in Federal penal and corrective institutions under this Service.

The personnel of the Public Health Service, consisting of a corps of medical, dental, sanitary engineer and pharmacist officers, nurses, specialists and other technical and non-technical employees, at mid-year consisted of 1,476 medical officers and persons of other scientific ratings, and 3,416 general and technical employees.

The White House Conference on Child Health and Protection,

Held in Washington, D. C., in November, has been so much talked about and is of such great interest on account of the views which have been coordinated from a vast number of physicians and others interested in child welfare, that we are presenting the final summary as given by Dr. Ray Lyman Wilbur in the *Miscellaneous Department* of this issue of the MONTHLY.

Post-Graduate Clinic for Negro Physicians.

A post-graduate clinic for negro physicians of Virginia is announced by Dr. W. T. Sanger, president of the Medical College of Virginia. This is stated to be the first educational venture of its kind in the South and will be established by the College in connection with Saint Philip Hospital, Richmond. The instruction will begin June 16th. The negro physicians have been asked to decide upon the courses. It is stated that the College has had the plan under consideration for several years and it has the endorsement of the Department of Clinical Education of the Medical Society of Virginia.

Dr. W. J. Innes,

Pennington Gap, Va., returned recently from a visit to Detroit, Windsor and London, Ontario, and other places. He is now apparently restored to health after his recent illness of several months.

Elected to Fellowship in American College of Physicians.

The following Virginia physicians were elected to fellowship in the College, at Louisville, Ky., on November 11th: Drs. Mason Romaine, Petersburg; Ernest William Brown (M. C., U. S. N.), Quantico; Charles M. Caravati and James H. Royster, Richmond; and Alex. F. Robertson, Jr., Staunton.

The fifteenth annual Clinical Session of the College will be held at Baltimore, Md., March 23-27, 1931. Dr. Sydney R. Miller, of that city, this year's president, is in charge of the General Scientific Program, while Dr. Maurice C. Pincoffs, professor of Medicine of the University of Maryland School of Medicine, is the General Chairman in charge of Arrangements, Clinics and Entertainment. Many national authorities are being selected to present papers or clinics. The Convocation for the conferring of Fellowships will take place March 25th. Virginia now numbers twenty-nine Fellows in the membership of the American College of Physicians.

Dr. Charles A. Young,

Roanoke, Va., after undergoing an operation for removal of his gall-bladder and appendix, went to Florida the latter part of December and will not return to his office until the first of February.

The New York Polyclinic Medical School and Hospital.

New York, N. Y., opened its new private pavilion and operating rooms for inspection on December 29th and 30th.

They also announce the appointments of Dr. George D. Stewart as Consulting Surgeon, and Drs. Evan Evans, Orrin S. Wightman and C. N. B. Camac, as Consulting Physicians to the Hospital.

Dr. J. William Humphries,

Culpeper, Va., has been appointed a member of the Culpeper County Board of Health to fill the vacancy caused by the resignation of Dr. Otis Marshall, who, it is announced, will go to Washington, D. C., where he will be connected with Red Cross headquarters.

Other members of the local board are Drs. Granville Eastham, Rapidan, and John R. Boldridge, Rixeyville.

Annual Report of the Surgeon General, U. S. Navy.

Figures for the calendar year ending June 30, 1930, show that in almost every phase of the health of the Navy conditions reached favorable points that have rarely been surpassed in previous years.

On July 1, 1930, the Medical Corps numbered nine hundred members. During the year eighty-one new medical officers were commissioned and fifty-three were separated from the service. There were 264 candidates authorized to appear for examination for appointment in the Medical Corps in January, 1930, and of this number eighty-four were found qualified for appointment.

The aviation medicine section was made an independent division during the year. Flight orders were issued to nine additional qualified flight surgeons of the thirty-five flight surgeons now performing the flight duties; twenty-seven are under flight orders. There has been an almost progressive decline in aviation fatalities per unit of flying hours during the last eight years.

The Department of Internal Medicine made two hundred and sixty-one complete diagnostic studies during the year. There were four hundred and sixty basal metabolism tests and one thousand two hundred and eight electrocardiographic examinations made. Work done by the various laboratories at the Medical School during the year shows an increase of 50 per cent over that of last year.

The Thomas W. Salmon Memorial Meeting.

A meeting in memory of the late Dr. Thomas W. Salmon, former Professor of Psychiatry of Columbia University and Medical Director of The National Committee for Mental Hygiene, will be held at The New York Academy of Medicine, Fifth Avenue and 103rd Street, New York City, on Saturday evening, January 10th, at 8:00 o'clock.

This meeting is open to the medical profession and the public but to obtain reservations application should be made to Dr. C. C. Burlingame, 17 East 42nd Street, New York City.

Announcement to this effect has been made by the committee formed shortly after his death for the purpose of establishing a permanent memorial in Dr. Salmon's honor. This committee contemplated the creation of an endowment fund, the income from which could be devoted to an annual lecture or series of lectures to be known as The Thomas W. Salmon Memorial Lectures to be given by authorities in psychiatry and mental hygiene for the advancement of knowledge in these fields in which Dr. Salmon was pre-eminent.

The sum of $100,000 has been subscribed by friends and admirers of Dr. Salmon and will be officially presented at this meeting at which the Memorial is to be formally established. At the conclusion of the program a committee of the Academy will announce the person chosen to give the first of The Thomas W. Salmon Memorial Lectures.

Each year there will be chosen by the Academy and a special advisory committee a scientific worker who has made an outstanding contribution in psychiatry, mental hygiene or a related field, and who will deliver the lecture or lectures in New York or other cities under the auspices of the Academy of Medicine or some other accredited scientific, medical or educational organization. The lectures will be published annually in leading periodicals and in book form to make them available for the largest number of workers in these fields and to stimulate further research and study.

Is Your Child Left-Handed?

Don't nag your left-handed child to force him to be right-handed, advised Dr. Ira S. Wile in a recent number of the *Parent's Magazine*. Such treatment, he says, may make the child nervous and unhappy and result in difficulties of speech, reading, writing, and thinking. Left-handedness is not an abnormality, he assures anxious parents, but is simply a sign that certain nerve centers on the right side of the brain are more active than those on the left side, whereas in a right-handed person the corresponding nerve centers on the left side are the more active.

Dr. R. D. Garcin,

Richmond, Va., who recently underwent a

XUM

couple of operations, is reported as much improved.

Major Guy L. Qualls, M. C.,

Of the U. S. Army, stationed for several years at Fort Eustis, Va., during which time he was a member of the Medical Society of Virginia, has been transferred to Fort Leavenworth, Kan.

The Southern Surgical Association

Held its annual meeting at Lexington, Ky., December 9th-11th, under the presidency of Dr. James M. Mason, Birmingham, Ala. The record attendance was 137 members present and there were thirty-eight scientific addresses made during the meeting. White Sulphur Springs, W. Va., was selected for the 1931 place of meeting, the dates for which will be December 8th-10th. Dr. Hugh H. Trout, Roanoke, Va., was elected to the presidency, and Dr. Frank C. Beall, Fort Worth, Texas, and Charles A. Vance, Lexington, Ky., were elected vice-presidents. Dr. R. L. Payne, Norfolk, Va., was re-elected secretary, and Dr. Julius Taylor, Columbia, S. C., treasurer.

Dr. B. C. Keister,

After several years in Harrisonburg, Va., has returned to Washington, D. C., where he will continue the practice of medicine and general surgery and will be located at 3461 Fourteenth Street, Northwest.

Dr. H. C. Grant,

Formerly of Norfolk, Va., after an absence from the State of several years, has returned and is located at Remington, Va., for the practice of medicine.

Dr. A. M. Byrd,

Formerly of Warm Springs, Va., but more recently located at Northfork, W. Va., announces his change of address to 311 Ellis Building, Phoenix, Ariz.

Civil Service Examinations.

The U. S. Civil Service Commission, Washington, D. C., announces open competitive examinations for Medical Officer, Associate Medical Officer, Assistant Medical Officer (general medicine and surgery), applications for which positions will be rated as received by the Commission, until June 30, 1931.

Dr. M. H. Todd,

For the past nine years chief surgeon of the Kentucky Division of the U. S. Coal and Coke Company (a branch of the Steel Corporation), at Lynch, Ky., has recently opened offices in Norfolk, in connection with the Sarah Leigh Clinic, and is specializing in surgery and traumatic surgery. Dr. Todd graduated from Johns Hopkins in 1913, and is a Fellow of the American College of Surgeons.

Hoffman-La Roche Expands Again.

Hoffmann-La Roche, Inc., of Nutley, N. J., well known as "makers of medicines of rare quality," have extended their property by the purchase of ten additional acres of land, making a total tract of thirty-five acres. The purchase was deemed essential in the light of the Company's steadily increasing sales under keen aggresive management.

In the words of Mr. Elmer H. Bobst, General Manager, "Hoffmann-La Roche has just begun to grow!"

Dr. F. F. Thweatt, Jr.,

Assistant Surgeon, U. S. Public Health Service, was relieved from duty at the Marine Hospital, at Ellis Island, N. Y., on December 15th, and assigned to duty at the Marine Hospital, Vineyard Haven, Mass., in charge of the hospital. Dr. Thweatt is a graduate of the University of Virginia, Medical Department, in 1928.

Call for Scientific Exhibits.

The Committee on Scientific Exhibits of the American Medical Association has issued the statement that applications for scientific exhibits for the Philadelphia meeting in June must be received before February 20, 1931.

For further information, write Mr. Thomas G. Hull, Director, Scientific Exhibits, 535 N. Dearborn St., Chicago, Ill.

Free Hearing Tests for Illinois Children.

Free hearing tests are being made among Illinois school children by the Illinois State School for the Deaf, at Jacksonville, reports the *Journal of the American Medical Association*. An experienced staff with audiometer equipment is being sent direct to the schools, whenever desired, to test the children and recommend treatment and suitable educational facilities. More than 200,000 Illniois children of school age are believed to have defective hearing.

Gorgas Essay Contest Announced.

A third annual essay contest on a health topic for students of junior and senior classes began December 8th. The subject selected for this year's contest is "Keeping Fit: The Gorgas Program of Personal Health." High school winners will receive a Gorgas Medallion,

State winners $20 in cash and National winners will receive $500, $250 and $100 in cash. All winning high school papers, which are to be chosen by faculty members, must reach the Executive Offices of the Gorgas Memorial Institute, 1331 G Street, N. W., Washington, D. C., not later than January 25, 1931. For detailed information write this address.

Dr. P. P. Pharr,

Of the class of '27, Medical College of Virginia, recently located at Hinton, W. Va., has moved to Beckley, W. Va., where he is now associated with Dr. A. H. Grigg in the practice of general medicine.

Dr. F. E. LaPrade,

Who graduated from the Medical College of Virginia in the class of '29, upon completing his internship at Welch Hospital, No. 1, Welch, W. Va., has been made assistant surgeon of that institution.

Dr. C. W. Lewis,

Graduate of the Medical College of Virginia in 1930, is serving his internship at Welch Hospital, Welch, W. Va.

Dr. C. F. Johnston,

Of the class of '29, Medical College of Virginia, has recently become connected with Drs. Hall and Daniels, of Welch, W. Va.

Dr. W. M. Phipps,

Of Hopewell, Va., has been elected a member of the Board of Directors of the Kiwanis Club of that city, for the year 1931.

Dr. A. D. Knott,

Parkersburg, W. Va., formerly professor of preventive medicine at the Medical College of Virginia, Richmond, and now director of the Wood County, W. Va., Health Unit, was recently elected president of the West Virginia Public Health Association.

American Public Health Association.

At the annual meeting of this Association, recently, Dr. Hugh S. Cumming, Surgeon General of the U. S. Public Health Service, Washington, D. C., was installed as president; Dr. William C. Hassler, of San Francisco, was elected president-elect; and Mr. Homer N. Calver, of New York, was re-elected executive secretary. It was decided to hold the 1931 meeting at Montreal, Canada, the dates being September 14th-17th.

Dr. Tom A. Williams,

Formerly of Washington, D. C., where he spent the summer months, announces his return to Miami Beach, Fla., where he is at the Monterey Apartments

For Sale—

On account of death, doctor's complete office equipment for obstetrics, pediatrics, and general practice. Will also rent offices. Splendid opening, with hospital facilities. Address Mrs. C. B. C., 209 High Street, Farmville, Va. (*Adv.*)

Technician Desires Position

In hospital or doctor's office. Nine years' experience and capable of taking charge of laboratory. Can furnish references. Address No. 263, care this journal. (*Adv.*)

For Sale—

Account death of owner, thirty-five bed hospital, excellent equipment and location. Splendid practice and patronage. Heart of city of 75,000 population. Write for details, to W. L. Burks, 527 Mountain Avenue, S. W., Roanoke, Va. (*Adv.*)

For Sale—

Account of death, doctor's office fixtures and instruments. Moderately priced. For information, address No. 264, care this journal. (*Adv.*)

Obituary Record

Dr. William Virgil Atkins,

Member of the Medical Society of Virginia since 1887, died at his home in Blackstone, Va., December 7th, death being due to angina pectoris. Dr. Atkins was a native of Nottoway County and seventy-three years of age. He graduated from Louisville, Ky., Medical College in 1883. His second wife and five children by a former marriage survive him. Dr. Atkins was a widely known southside Virginia physician and had been for many years a surgeon for the Norfolk and Western Railway, and also physician for the Blackstone College for Girls.

Dr. John Charles Burks,

Owner and physician-in-charge of St. Charles Hospital, Roanoke, Va., died Decem-

XUM

ber 5th, after having been in bad health for several years—from about the time of the death of his wife. He was born in Rockbridge County, Va., in 1873, and, after graduating in medicine at the Medical College of Virginia in 1897, practiced in that county and also at Pocahontas, Va., for a time before locating at Roanoke. He had been a member of the Medical Society of Virginia from the year of his graduation in medicine. Several sisters and a brother survive him.

Dr. John Reveley Guerrant,

Formerly of Franklin County, Va., died at the home of his daughter in Salt Lake City, Utah, December 19th. He is survived by his wife and two daughters. Dr. Guerrant was about sixty years of age and graduated in medicine from Columbia University, College of Physicians and Surgeons, New York, in 1891. He was a member of the Medical Society of Virginia until several years ago when he retired from active practice.

Dr. William Jeffries Newbill,

Irvington, Va., well-known doctor of the Northern Neck, died December 15th. Had he lived another day he would have celebrated his eighty-fourth birthday. Two sons and a brother survive him. At the age of sixteen, Dr. Newbill entered the Confederate service in the War Between the States, and was one of the last survivors of Mosby's cavalry. Shortly after the war, Dr. Newbill took up the study of medicine at the University of Maryland, Baltimore, and received his diploma from that institution in 1868, following which he practiced medicine for a number of years in this State.

Dr. Delmar F. Weaver,

Well-known physician of Orange, Va., died at his home in that place on December 12th. Death was due to a cerebral hemorrhage, following a paralytic stroke suffered three hours earlier. Dr. Weaver, who was fifty-eight years of age, studied medicine at the University of Virginia, and received his diploma from that school in 1894. Following his graduation he returned to his home county and practiced there continuously. His wife and six children survive him. One of the sons is now studying medicine at the University of Virginia.

Dr. James Wood Jordan,

Formerly of Asland, Va., died December the 7th, after having been in ill health for the past three years. He was fifty-three years of age and graduated from the Medical College of Virginia in 1901. Prior to the entry of the United States into the World War, Dr. Jordan was a major in the Anglo-French medical corps stationed at a hospital near Paris. He later resigned this position to serve in the medical corps of the American Expeditionary Forces. At the close of the war, he remained in the army and served at several posts until his health declined. His wife, two sisters and a brother survive him.

Miss Agnes Dillon Randolph,

Richmond, Va., Director of the Tuberculosis Bureau of the Virginia State Department of Health, died on December the 4th, following a short illness. In the words of an editorial in a daily paper, the death of Miss Randolph "marks the passing of one of the ablest women executives and public servants the State has ever known." As a girl she trained as a nurse, and served as superintendent of nurses both at Virginia and Memorial Hospitals in Richmond, and was later founder of the chair of Nursing at the University of Virginia. In 1914, Miss Randolph became executive secretary of the Virginia Tuberculosis Association, which position she held until 1919. She was nationally known for her work as an executive in the tuberculosis field.

Dr. C. T. Barker,

Gate City, Va., died on October 6th, death being due to nephritis. He was seventy-seven years of age and was licensed in Virginia by exemption.

Dr. Theodore Dudley Rountree,

Rockdale, Texas, who graduated from the University of Virginia, Department of Medicine, in 1902, died in San Antonio, Texas, on October 5th, aged fifty years.

Dr. Harry Houston Hughart,

An alumnus of the former University College of Medicine, Richmond, Va., in the class of 1900, died suddenly on November 3rd, at his home in Tombstone, Ariz., at the age of fifty-four years. Death was due to heart disease.

Dr. Henry Hubert Powell,

Stantonsburg, N. C., died on October 14th, aged forty-four years, of heart disease. Dr. Powell studied medicine in Richmond, graduating from Medical College of Virginia in 1911.